CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF CITY PLANNING

DRAFT

84.199E

524 HOWARD STREET

OFFICE BUILDING

SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

PUBLICATION DATE: NOVEMBER 11, 1988
PUBLIC HEARING DATE: DECEMBER 15, 1988
PUBLIC COMMENT PERIOD: NOVEMBER 11, 1988 – DECEMBER 15, 1988

WRITTEN COMMENTS SHOULD BE SENT TO
THE ENVIRONMENTAL REVIEW OFFICER
450 McALLISTER STREET, SIXTH FLOOR, SAN FRANCISCO, CA 94102

City and County of San Francisco
Department of City Planning

450 McAllister Street
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524 HOWARD STREET
DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT
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ERRATA

IV. ENVIRONMENTAL SETTING

DSEIR p. 16, paragraph one: The sentence beginning in line 10, "In 1987 . . ." should be underlined as new language; the corrected paragraph is shown below:

> The Bay Area Air Quality Management District (BAAQMD) operates a regional monitoring network which measures the ambient concentrations of six air pollutants: ozone (O_3), carbon monoxide (CO), particulates (both fine particulate matter [PM_{10}] and total suspended particulate [TSP]), lead (Pb), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). On the basis of the monitoring data, the Bay Area, including San Francisco, currently is designated a non-attainment area with respect to the federal ozone and CO standards. A three-year summary of the data collected at the BAAQMD monitoring station nearest the project site (about two miles south at 900 23rd St.) is shown in Appendix A, p. A-33, together with the corresponding federal and/or state ambient air quality standards. In 1987, there were three violations of the federal and state particulates standards. In 1986, there were two violations of the federal and state eight-hour average CO standard and five violations of the previous state average 24-hour TSP standard. In 1985, there were three violations of the federal and state eight-hour average CO standard and five violations of the previous state average 24-hour TSP standard./1/

V. ENVIRONMENTAL IMPACTS

DSEIR p. 44, third full paragraph: Occupancy percentages for parking in project vicinity are omitted. The corrected paragraph is shown below:

> The proposed project is in the C-3 District, in which off-street parking is not required for commercial uses. The City Planning Code allows accessory parking up to seven percent of the gross floor area of the project. Parking would be subject to rates that encourage short-term use and discourage all-day parking. Occupancy in public off-street parking lots and garages in the vicinity would be expected to increase from the existing 88% to 90% with demand generated by the proposed project.

DSEIR p. 47, footnote /4/ is replaced with the following updated note:

> /4/ The year 2000 modal splits account for changes in travel behavior which are assumed to occur as a result of growth in Downtown & Vicinity, as described in Mission Bay EIR, Vol. II, pp. VI.E.53-54.

DSEIR p. 52, Table S-4, Existing and Projected Curbside Carbon Monoxide Concentrations at Selected Intersections: The First and Harrison concentrations for 2000 are reversed; the one-hour level would be 7.9 ppm, and eight-hour level would be 5.6.

DSEIR p. 53, Table S-5, Projected Daily Pollutant Emissions: Corrected calculations for project emissions in column one are shown below:

TABLE S-5: PROJECTED DAILY POLLUTANT EMISSIONS

Pollutant	Emissions (tons per day)/a/ Project 2000/b/	Mission Bay EIR 2000/c/	Bay Area 2000/d/
Hydrocarbons	0.0086	0.17	560
Nitrogen Oxides	0.0092	0.29	492
Carbon Monoxide	0.1723	5.6	2,170
PM-10	0.0133	0.27	764
Sulfur Oxides/e/	0.0012	0.05	225

/a/ Project and Mission Bay EIR emissions were calculated using BAAQMD EMFAC7D vehicle emission factors. Emissions of HC, NOx, and CO include an assumed six minutes of idling time per vehicle trip. Emissions of particulates include dust disturbed from roadway surfaces.
/b/ Based upon a weighted daily average of 6,848 miles traveled.
/c/ Mission Bay EIR, Vol. II, Table IV.1.2, p. IV.I.12.
/d/ Air Quality and Urban Development: Guidelines for Assessing Impacts of Projects and Plans, Revised April 1988, the Bay Area Air Quality Management District.
/e/ Sulfur oxides and sulfur dioxides are assumed to be interchangeable.

SOURCE: Environmental Science Associates, Inc.; EIP Associates.

DSEIR p. 59, footnote /1/ omits the "Employment" as the first word in the first sentence; the complete note is included below:

> /1/ Employment is calculated from the estimates of gross sq. ft. of building space from project description. Based on C-3 District employment density factors from the San Francisco Department of City Planning, Downtown Plan EIR, EE81.3, certified October 18, 1984 (268 sq. ft. per office employee, incorporating an average five percent maintenance/security/parking employee).

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Department of City Planning

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DATE: November 11, 1988

TO: Distribution List for the 524 Howard Street Project Draft Supplemental EIR

FROM: Barbara W. Sahm, Environmental Review Officer

SUBJECT: Request for the Final Supplemental Environmental Impact Report for the 524 Howard Street Project

This is the Draft of the Supplemental Environmental Impact Report (EIR) for the 524 Howard Street project. A public hearing will be held on the adequacy and accuracy of this document on December 15, 1988. After the public hearing, our office will prepare and publish a document entitled "Summary of Comments and Responses" which will contain a summary of all relevant comments on this Draft Supplemental EIR and our responses to those comments. It may also specify changes to this Draft Supplemental EIR. Those who testify at the hearing on the draft will automatically receive a copy of the Comments and Responses document along with a notice of the date reserved for certification (usually about nine weeks after the hearing on the draft); others may receive such copies and notice on request or by visiting our office. This Draft Supplemental EIR, together with the Summary of Comments and Responses document, will be considered by the City Planning Commission in an advertised public meeting and certified as a Final Supplemental EIR if deemed adequate.

After certification, we will modify the Draft EIR as specified by the Comments and Responses document and print both documents in a single publication called the Final Supplemental Environmental Impact Report. The Final Supplemental EIR will add no new information to the combination of the two documents except to reproduce the certification resolution. It will simply provide the information in one rather than two documents. Therefore, if you receive a copy of the Comments and Responses document, you will technically have a copy of the Final Supplemental EIR.

We are aware that many people who receive the Draft Supplemental EIR and Comments and Responses have no interest in receiving virtually the same information after the EIR has been certified. To avoid expending money and paper needlessly, we would like to send copies of the Final Supplemental EIR to private individuals only if they request them.

If you want a copy of the Final Supplemental EIR, please so indicated in the spaced provided on the next page and mail the request to the Office of Environmental Review within two weeks after certification of the EIR. Any private party not requesting a Final Supplemental EIR by that time will not be mailed a copy. Public agencies on the distribution list will automatically receive a copy of the Final Supplemental EIR.

Thank you for your interest in this project.

PLACE
POSTAGE
HERE

Department of City Planning
Office of Environmental Review
450 McAllister Street, 6th Floor
San Francisco, CA 94102

Attn.: Sally Maxwell
84.199E: 524 Howard Street

PLEASE CUT ALONG DOTTED LINE

RETURN REQUEST REQUIRED FOR FINAL ENVIRONMENTAL IMPACT REPORT

REQUEST FOR FINAL ENVIRONMENTAL IMPACT REPORT

TO: Department of City Planning
Office of Environmental Review

Please send me a copy of the Final EIR.

Signed: _____

Print Your Name and Address Below

_____

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF CITY PLANNING

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524 Howard Street office
building : [draft]
1988.

524 HOWARD STREET
DRAFT SUPPLEMENTAL EIR

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I. INTRODUCTION

A Final EIR was prepared for the 524 Howard Street project in 1986. That EIR included cumulative analyses based on the information in the Downtown Plan EIR. The Downtown Plan EIR, certified in 1984 (EE81.3), analyzed impacts of downtown space and employment growth under various development controls, in relation to city-wide and regional growth.

Since certification of the Downtown Plan EIR and the project EIR, new information has become available about cumulative impacts of downtown growth. This new information has been published in the Mission Bay Draft EIR and the South of Market Plan Draft EIR. The Mission Bay EIR covers the impacts of potential development in a 300-acre area just south of the greater downtown, from Townsend St. to 16th St., east of the I-280 freeway. The South of Market Plan EIR analyses impacts of development under the proposed South of Market Plan development controls and alternatives in the area generally south of Mission St. to the Mission Bay planning area and east of U.S. 101 to the Rincon Hill area east of Second St.

The new information in these two area-wide EIRs includes revised estimates of employment growth for the Downtown & Vicinity, including Mission Bay, and for the rest of the City; revised analysis and conclusions of the overall cumulative transportation picture in the future; and new cumulative air quality information including revised emissions factors for analysis of transportation-related air quality impacts. (As used in this EIR, the term "the Downtown & Vicinity" means the C-3 District and the areas around it: South of Market, Mission Bay, South Van Ness, Civic Center, and the northeastern Waterfront. See Mission Bay EIR, Vol. II, pp. IV.4-5. This area is also occasionally called the Greater Downtown in this project EIR.)

This supplement to the 524 Howard Street Project EIR provides the new cumulative data and information. It replaces summaries of the Downtown Plan EIR cumulative impact information with a summary of the results from the Mission Bay and South of Market EIRs where those results are new and different from the Downtown Plan EIR. Because the proposed project is in the Downtown planning area (the C-3 District), while the new information is from EIRs on adjacent planning areas, this project EIR cannot use tiering as defined in CEQA Sections 21093 and 21094 to include the new cumulative analysis results. Instead, incorporation by reference with a summary is used pursuant to CEQA Sections 21061 and 21100, (see also State CEQA

Guidelines Sections 15150). The documents, incorporated by reference, are available for public review at the Office of Environmental Review, 450 McAllister Street, Sixth Floor, San Francisco. For topics when the Downtown Plan EIR remains current, the tiering process remains applicable when used.

New project-specific information is also included in this Supplement. For example, buildings under construction and proposed near the project site have changed since the project EIR was certified, and this Supplement includes revised discussions of land use, urban design and shadow impacts to reflect those changes. The Supplement also describes a project alternative, now the project sponsor's preferred alternative, that would have similar or reduced impacts, compared to those of the project analyzed in the 1986 Final EIR.

II. SUMMARY

PROJECT DESCRIPTION

The 524 Howard Street Office Project, as proposed in the FEIR, would be a 25-story office and retail building located on Lot 13 of Assessor's Block 3721. The 12,267-sq.-ft. site is developed with a one-story garage on the southern portion of the site and a paved lot on the northern portion of the site. The garage would be demolished for the project. The project would be about 333 ft. tall with 258,292 gross sq. ft., including parking, mechanical and other unoccupied floor area. The building would incorporate 147,213 sq. ft. of transferred development rights from as-yet unidentified sites. The FAR would be 18:1.

The project sponsor would request Project Authorization from the City Planning Commission pursuant to Sections 320-324 of the City Planning Code whereby the project would be evaluated and compared to other proposed projects.

(The project description has not changed from the Final EIR. Alternative F, described on pp. 61-68 of this document, is a project alternative that would be 24 stories tall and a total about 200,000 sq. ft. of office space, compared to about 221,000 for the proposed project. Alternative F is the project sponsor's preferred alternative.)

The following text in the FEIR Summary section is revised to reflect updated discussions in this document:

LAND USE AND ZONING

This document includes a minor alteration to the land use setting to account for changes in the status of other projects under construction, approved and under review in the project vicinity.

The following paragraph is added after the first paragraph under Land Use and Zoning, FEIR p. 2:

Forecasts in the Mission Bay EIR show about 94,459,000 to 94,884,000 gross sq. ft. of occupied office space in the Downtown & Vicinity in the year 2000. The range is based on different amounts of office space in Mission Bay, depending on the development program approved and built. This is an increase of about 25,000,000-26,000,000 gross sq. ft. over the amount existing in 1985. The forecast accounts for demolition and new construction and for conversion of existing buildings from non-office to office uses in the future. It also accounts for absorption of several million sq. ft. of office space vacant in 1985 and another several million approved or under construction as of 1985. About 75% of the office space would be in the C-3 District. The proposed project would contribute about one-quarter of one percent of the total future amount of office space in the Downtown & Vicinity.

URBAN DESIGN AND VISUAL QUALITY

This document describes changes photomontages in Figures 13, 14, 15, and 16 to account for changes in the status of other projects under construction, approved, under review, or no longer under review in the project vicinity.

SHADOW AND WIND

This document includes a discussion of shadows on open space and Proposition K.

CULTURAL RESOURCES

The first full paragraph on FEIR p. 4 is replaced with the following:

While earlier archival research produced no evidence to suggest that noteworthy prehistoric materials may exist under the site, recent discoveries of prehistoric shellmounds in subsurface locations at 49 Stevenson Street, about one block north of the project site, and at other South of Market locations suggest that other deeply buried prehistoric sites may exist in the project vicinity, even in places subject to previous grading.

TRANSPORTATION

The entire Transportation Summary, FEIR pp. 4-6, is included here for completeness; revised language is underlined:

Sidewalk detours and curb lane closures on both the Howard St. and Natoma St. frontages would be necessary during project construction. Demolition and excavation would generate an average of 10 and 40 truck round trips per day, respectively. Construction truck traffic would be limited to the period between 9:00 a.m. and 3:30 p.m.

The project would generate about 5,440 net new person trips per day. About 755 new outbound trips would occur during the p.m. peak period, 470 of these during the p.m. peak hour.

The project would remove an existing 100-space parking garage and provide 45 spaces in the new building. Estimated equivalent daily parking demand from the project would be about 195 spaces, resulting in an unmet demand of 250 spaces.

The proposed project would generate about 230 new pedestrian trips on the adjacent sidewalks during the noon 15-minute peak period and about 160 new pedestrian trips during the p.m. 15-minute peak period. Sidewalk operations, currently in the open, unimpeded and impeded ranges at locations adjacent to the project site during both the noon hour and p.m. peak hour, would increase slightly with the addition of anticipated pedestrian trips from the project, but levels of service would not change.

The project would add about 180 outbound trips to Muni, 185 trips to BART, and 265 outbound trips to other transit agencies during the p.m. peak period in the year 2000. The project would generate an annual cost deficit to Muni of about $22,400 which would be less than its contributions to the General Fund, the Transit Development Impact Fee, and sales tax revenues. The project would result in an annual net operating deficit to BART of about $260,000. BART's operating deficit per passenger is likely to decline in real terms as planned service improvements become operational in the future.

The transit demand from the project would represent about 0.2% of the total transit demand in the year 2000. Cumulative development under the Downtown Plan to the year 2000, in conjunction with planned capacity increases of transit carriers, would be expected to cause the following changes in transit levels of service during the peak period: Muni Northeast Corridor, D to C; BART Transbay, F to E; AC Transit, C to D; Golden Gate Ferry, B to A; Tiburon Ferry, B to C; and CalTrain, B to C.

With cumulative development by the year 2000, sidewalk and crosswalk operations would remain in the unimpeded and impeded range for all locations studied.

Cumulative development, including that from the proposed project, by the year 2000 would be expected to further exacerbate the existing peak-hour traffic Level of Service (LOS) "F" conditions at the intersection of First and Harrison Streets and worsen existing LOS "C" conditions at the intersection of Fourth and Harrison Streets to LOS "D".

The Mission Bay and South of Market Area EIRs address transportation impacts in 2000 and 2020. Both EIRs show that by 2000, congested highway conditions would result in a shift from autos to higher use of transit and ridesharing by travelers from the Downtown & Vicinity. The East Bay would be the most congested corridor, the Peninsula would be the least. By 2020, travel demand would exceed the capacity of regional transportation systems. To serve regional growth, expanded transit and freeway systems would be required.

Regional travel was analyzed for each of the three major approaches to San Francisco; the North Bay via the Golden Gate Bridge; the East Bay via the San Francisco-Oakland Bay Bridge; and the Peninsula via the U.S. 101 and I-280 freeways. The analysis for 2000 is

based on comparing the projected demand for transportation system capacities developed for 2000 as a base and identifies additional capacity above the 2000 level that would be needed to serve the travel demands of 2020.

Growth in the entire Downtown & Vicinity and the rest of the region, rather than growth in South of Market of Mission Bay alone, would be the primary source of travelers trying to cross the Golden Gate and Bay Bridges, and to use the U.S. 101 and I-280 freeways at peak hours.

To analyze cumulative impacts on Muni, individual Muni routes were grouped on the basis of the location of their alignments and stops into the "Northeast," "Northwest," "Southwest," and "Southeast" areas of San Francisco, referred to a "screenlines." By 2000, ridership would generally be accommodated on the Muni screenlines. Slight overcrowding would occur on the Northwest screenline during the p.m. peak hour, and on the Northeast screenline during the p.m. peak period. However, by 2020, all but the Southwest screenline would be operating beyond Muni's load standard. Additional service required could include new light rail service to the Geary Boulevard corridor to the Northwest, and to the Bayshore corridor in the Southeast area of the City.

AIR QUALITY

The Air Quality Summary, FEIR p. 6, is replaced with the following text:

Project-related vehicular traffic would add to cumulative regional pollutant emissions. Project-related traffic would contribute about one percent of total incremental emissions resulting from Downtown & Vicinity projected in the Mission Bay EIR. Emissions of particulates generated by the project and cumulative development would increase particulate concentrations, which would increase the frequency of particulate standards violations in San Francisco, with concomitant health effects and reduced visibility.

Project emissions alone would not cause any standards to be violated, and local CO concentrations are predicted to be less in 2000 than in 1985, because the effects of emission controls on new vehicles would offset increases in traffic volumes and congestion.

CONSTRUCTION NOISE

This document includes only a minor alteration to the description of construction noise impacts in the FEIR to account for changes in the status of other projects under construction, approved and under review in the project vicinity.

SEISMICITY

The Downtown & Vicinity, like other parts of San Francisco and the Bay Area, is subject to potentially large earthquakes from the San Andreas and Hayward faults. Employment growth, such as that expected for 524 Howard St., would result in large numbers of persons being exposed in the future to earthquake hazards if an event occurred during the day. Since new buildings are subject to more stringent building and structural standards than are older buildings, persons working in buildings such as the proposed project would be relatively safer than those in some older buildings.

POPULATION AND EMPLOYMENT

The following Population and Employment Summary replaces the Employment and Housing Summary, FEIR pp. 7-8; revised language is underlined: (Project effects are the same as in the FEIR; they are included here for completeness.)

> The project would accommodate about 870 permanent full-time jobs, mainly consisting of positions in corporate and professional positions. Housing demand generated by the project would be approximately 85 units in San Francisco, according to the formula in Section 313 (OAHPP, Ordinance 358-85).
>
> Regardless of the type of development in Mission Bay and in South of Market, the importance of San Francisco employment as a factor affecting regional housing demand will decline over time because more housing will be added in the City relative to job growth, compared to the situation in the past. As housing and the labor force continue to grow more rapidly outside San Francisco, people working in San Francisco will represent the same or a smaller percentage of the employed people living elsewhere in the region. San Francisco workers will require about the same share of the region's housing in the future as they did in the early 1980's. San Francisco's effects on the regional housing market will vary in the future. City workers could become more important to the housing market in some close-in communities in western parts of the East Bay and east of the hills along BART corridors, in northern San Mateo County and parts of Marin.
>
> About half of the people working in the Downtown & Vicinity would live in the City in 2000 and 2020. The rest would live in communities throughout the rest of the region: about 30% in the East Bay, 13% in the Peninsula and in the South Bay and about 8% in the North Bay. Downtown & Vicinity workers living in the City would represent about 57% of the City's employed residents. People working downtown would represent a considerably smaller proportion (about 4-9%) of the employed residents of other Bay Area communities.

MITIGATION MEASURES

The Mitigation Measures chapter of this document includes additions to the Transportation measures which could be implemented by public agencies which account for new mitigation measures discussed in the Mission Bay Draft EIR.

ALTERNATIVES

The following is added to the end of the text on FEIR p. 9:

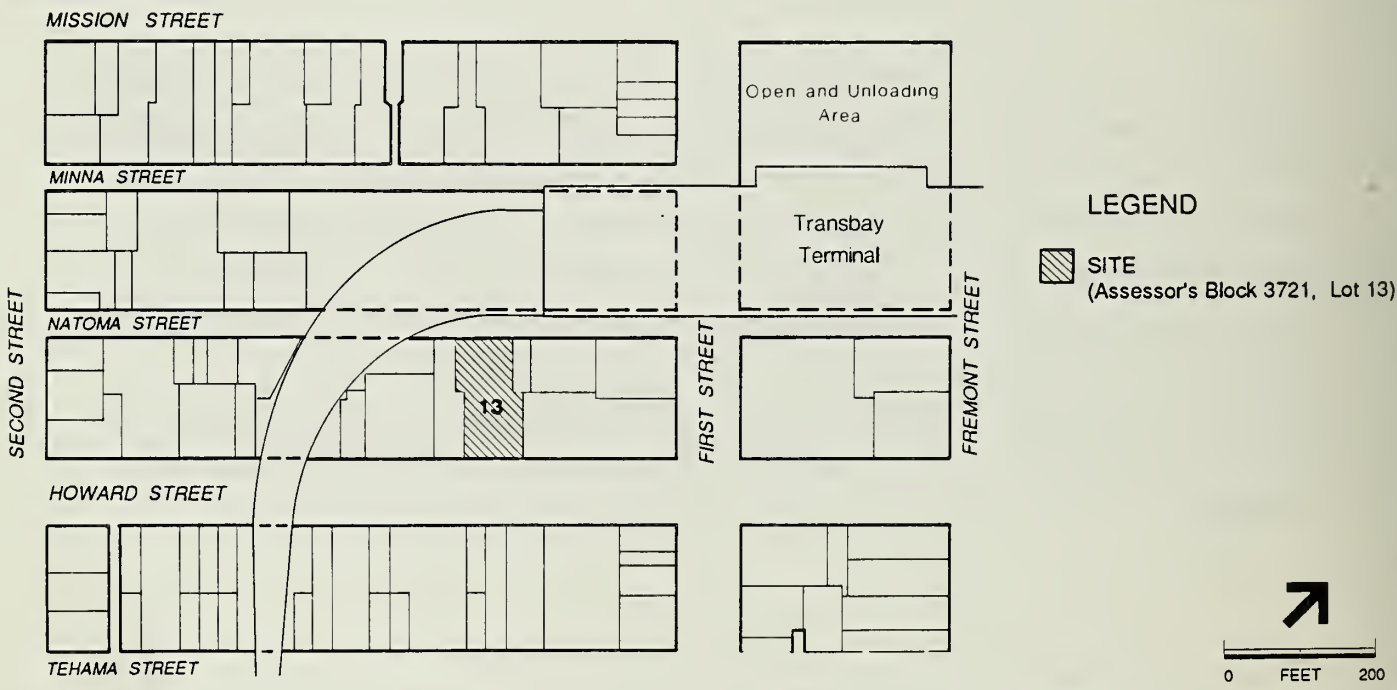
F. Indoor Park Alternative.

III. PROJECT DESCRIPTION

The project sponsor, 524 Howard Associates, proposes to construct a 25-story office and retail building at 524 Howard St. in San Francisco. The architects are Heller & Leake, Architects. The sponsor's objectives are to develop high- quality office space with relatively small-size office floors; to produce a distinctive landmark building identifying an important City location; and to provide a return on investment.

The project site is on the north side of Howard St. between First and Second Sts., Lot 13 of Assessor's Block 3721 (see Figure S-1). Natoma St. borders the site to the rear (north). Northeast of the Natoma and First St. intersection is the Transbay Terminal. The 12,267-sq.-ft. site is developed with a one-story garage on the southern portion of the site and a paved lot on the northern portion of the site. The garage would be demolished for the project. The site is in the C-3-0 (SD) (Downtown Office Special Development) Use District, in which the basic allowable Floor Area Ratio (FAR) is 6:1. It is in the 450-S Height and Bulk District, in which the maximum height is 450 feet. The "S" zone divides buildings into three sections: the base, lower tower and upper tower. The "S" designation is intended to result in slender stepped buildings with interesting rooflines.

The project would be a 25-story (including the roof-top mechanical level), approximately 333-ft. tall building (including the mechanical roof level) with 258,292 gross sq. ft., including parking, mechanical and other unoccupied floor area. The building would incorporate 147,213 sq. ft. of transferred development rights from as-yet unidentified sites. The ground floor level would contain retail space (3,570 sq. ft.) facing a two-story pedestrian arcade. The mezzanine level would contain 5,630 sq. ft. of retail space and 3,540 sq. ft. of office space. Floors 3 through 24 would contain 220,815 sq. ft. of office area. The 25th floor (roof-level) would contain mechanical space, and the basement would contain 45 parking spaces. The two ground-floor freight loading spaces and the ramp to the basement parking level would be accessible from Natoma St.



524 Howard Street

FIGURE S-1
PROJECT LOCATION

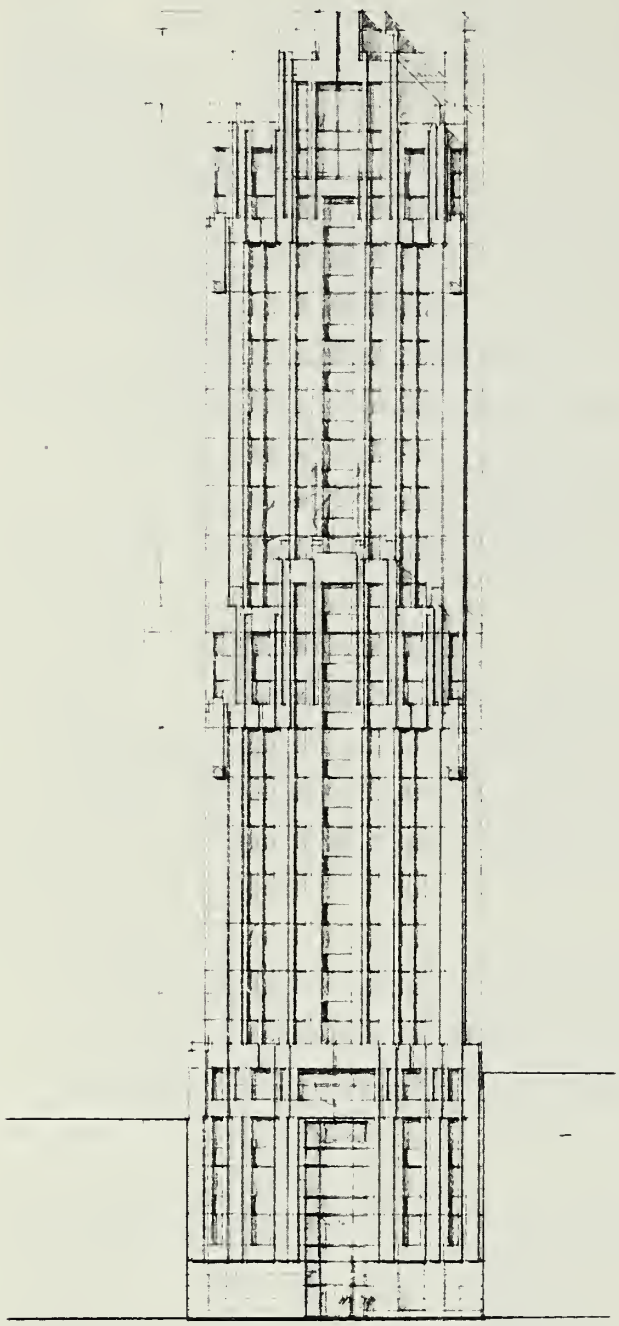
SOURCE: Environmental Science Associates, Inc.

The Howard St. entrance would be defined by a four-story-high recess. A double-height pedestrian arcade would extend through the ground floor to Natoma St. Setbacks would be located at the 16th floor on the Howard and Natoma Sts. faces; corners would be cut back at the 6th, 13th, 15th, 23rd and 24th levels (see Figure S-2).

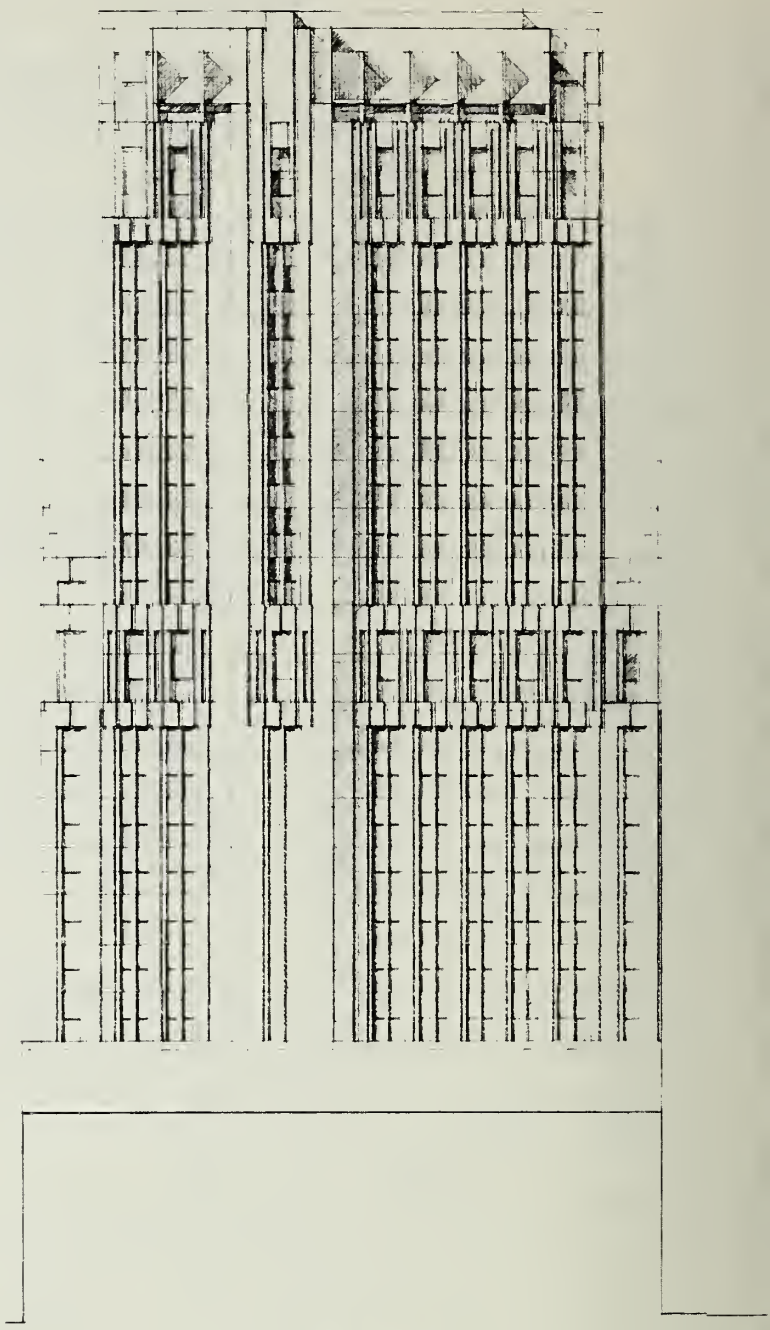
Under Section 309 of the City Planning Code the sponsor would request exception from (1) requirements of Section 148, to allow exceedances of the 11 mile per hour comfort criterion for pedestrian areas and the seven mile per hour comfort criterion for seating areas and (2) requirements of Section 132.1(c)2, to allow a separation of towers setback that would be about ten feet less than the required 15-foot setback. Under Section 309 the City Planning Commission would also evaluate artwork (Section 149) and open space (Section 138). The project sponsor would request Project Authorization from the City Planning Commission pursuant to Sections 320-324 of the City Planning Code, whereby the project would be evaluated and compared to other proposed projects.

The project sponsor anticipates completion of the final project design by mid-1989. Construction would commence once permits were issued. The project would take approximately 18 months to complete. Occupancy would be expected to commence by early 1991, with final project occupancy completed sometime after late-1991. The project sponsor estimates construction costs of $22.5 million.

(Alternative F, described on pp. 66-73 of this document, is a project alternative that would be 24 stories tall and total about 200,000 sq. ft. of office space, compared to about 221,000 for the proposed project. Alternative F is the project sponsor's preferred alternative, as discussed on p. 73).



Howard Street Elevation



East Elevation

0 FEET 50

524 Howard Street

FIGURE S-2
HOWARD STREET AND EAST ELEVATIONS

SOURCE: Heller & Leake, Architects

IV. ENVIRONMENTAL SETTING

A. LAND USE AND ZONING

The first full paragraph on FEIR p. 20 is revised to read as follows, to provide updated information on recent development in the project vicinity. (The references to the proposed 526 Mission Street and 535 Mission Street projects have been deleted as they are no longer active). Revised language is underlined:

> North of the bus ramps are small-scale buildings housing wholesaling, office and retail uses. The 26-story 100 First Street building, at Mission north of the project site, was completed in 1988. Golden Gate University, Pacific Bell, and other office and retail/restaurant development front the north side of Mission St. and 71 Stevenson, between First and Second Sts., and 855 Market Street at First, are two recently completed developments north of Mission. The 18-story 49 Stevenson building is under construction. North across Mission Street from the Transbay Terminal is the Terminal Plaza building housing a restaurant and retail uses on the ground floor and offices above. The Fremont Center development has ground floor banking, a plaza and a retail building with restaurants.

The reference to the approved 201 Second Street project, the next to last sentence in the first partial paragraph on FEIR p. 21 is deleted. That project is no longer active.

B. URBAN DESIGN

The third paragraph on FEIR p. 30 is revised to read as follows to reflect updated information on development in the project vicinity. Revised language is underlined:

> The view from the project site to the west along Howard Street includes the bus ramp leading from the Transbay Terminal. To the east is visible a freeway overpass leading to the Main Street exit and new office buildings of about 12 to 20 stories along Main and Spear Streets, including the 160 Spear building, and Rincon Square. The recently completed 100 First Street building is visible north of the project site near 5 Fremont Center. The low-rise building on the project site is not visible from any medium- or long-range viewpoints.

C. SHADOW AND WIND

The following paragraph is added after the first paragraph under Shadow, FEIR p. 30:

> Open spaces in the project vicinity include the Transbay Terminal staging area, at the southeast corner of First and Mission Sts., the Golden Gate University entry and seating area on the north side of Mission west of First St., and Tishman Plaza and Chevron Plaza, both on Market near First St. The recently completed 100 First Street building includes publicly accessible private open space on the roof of the two-story garage west of the office tower. The nearest open space protected by Proposition K in the vicinity of the proposed project is Union Square to the northwest and St. Mary's Square to the north, each of which is several blocks from the project site.

The first paragraph under Wind, FEIR p. 30 is revised to read as follows, to reflect current climatic data sources:

> U.S. Weather Bureau and Bay Area Air Quality Management District data show that westerly (i.e., from the west) to northwesterly winds are the most frequent and strongest winds during all seasons in San Francisco./2/

The following replaces footnote/2/, FEIR p. 32:

> /1/ The U.S. Weather Bureau data used in this analysis were originally gathered at the weather station atop the old Federal building at 50 United Nations Plaza during the years 1945-50. Data were taken hourly, annually for 16 wind directions. The data base, comprising of 32,795 hourly observations, is of sufficient length to provide a reliable estimate of future climatic conditions in San Francisco.

D. CULTURAL RESOURCES

The following is added as the last three paragraphs under Cultural Resources, FEIR p. 36, to provide current information on cultural resources in South of Market:

> Recent finds in South of Market include two prehistoric shell mound discoveries: At 49 Stevenson St. about 800 ft. north of the project site, a prehistoric shell mound (CA-SFR112) was discovered in May 1986 which dates to the late Horizon period (after 500 A.D.). The find was characterized by a wide range of obsidian projectile points, charm stones, net weights and large amounts of shellfish and fish remains as well as some mammal bones. No human remains were encountered. The bulk of the shell mound remains preserved under the 53 Stevenson St. building.

At Fifth and Market Sts. about 3,500 ft. west of the project site, a prehistoric shell mound (CA-SFR113) was discovered which dates to the Middle Horizon period (between 1,000 B.C. to 500 A.D.). The find was characterized by a wide range of obsidian projectile points, net weights and large amounts of shellfish and fish remains as well as some mammal bones. No human remains were encountered. The entire shell mound was destroyed as a result of the excavation of the project.

The 49 Stevenson Street shellmound was covered by a large sandhill at the beginning of the Gold Rush era; a massive amount of this sandhill was cut away in the late 1850's or early 1860's. Yet, in spite of these nineteenth century topographic alterations, an extensive, largely intact and culturally rich prehistoric shellmound was encountered at a depth of 19 feet below present street grade. In addition, two other prehistoric shellmounds have been discovered within the South of Market area since the Stevenson Street shellmound was first encountered. These discoveries suggest that deeply buried prehistoric sites may exist at other places within the South of Market region, even in locations that were subjected to extensive historic period grading./2/

The following footnote is added after footnote /1/, FEIR p. 36:

/2/ Allen G. Pastron, Ph.D., President, Archeo-Tec, letter to Brian Boxer, EIP Associates, October 17, 1988. This letter is on file and available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister, San Francisco.

E. TRANSPORTATION

The last sentence in the first partial paragraph on FEIR p. 38 discussing Mission Street jitney service is deleted, as the jitneys no longer operate.

The following paragraph is added to FEIR p. 39, before the footnotes:

The site is located outside the Downtown Core automobile control area designated in the Downtown Transportation Plan of the Transportation Element of the San Francisco Master Plan./4/ A Plan goal is to reduce the number of private commuter vehicles and excess automobile traffic in the downtown core; the Plan discourages the addition of new long-term parking spaces in and around downtown. The site is located in an area designated as a Parking Belt in the Downtown Transportation Plan of the Transportation Element of the San Francisco Master Plan. Parking belts are areas that the Plan identifies as appropriate for short-term parking facilities to replace spaces removed from the core area.

F. AIR QUALITY

The first paragraph in Air Quality, FEIR p. 39, is replaced with the following to reflect current regional air quality monitoring data; revised sentences are underlined:

> The Bay Area Air Quality Management District (BAAQMD) operates a regional monitoring network which measures the ambient concentrations of six air pollutants: ozone (O_3), carbon monoxide (CO), particulates (both fine particulate matter [PM_{10}] and total suspended particulate [TSP]), lead (Pb), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). On the basis of the monitoring data, the Bay Area, including San Francisco, currently is designated a non-attainment area with respect to the federal ozone and CO standards. A three-year summary of the data collected at the BAAQMD monitoring station nearest the project site (about two miles south at 900 23rd St.) is shown in Appendix A, p. A-33, together with the corresponding federal and/or state ambient air quality standards. In 1987, there were three violations of the federal and state particulates standards. In 1986, there were two violations of the federal and state eight-hour average CO standard and five violations of the previous state average 24-hour TSP standard. In 1985, there were three violations of the federal and state eight-hour average CO standard and five violations of the previous state average 24-hour TSP standard./1/

The last sentence in the full paragraph, FEIR p. 40 is replaced with the following two sentences; revised language is underlined:

> In December 1985, the City monitored CO and counted traffic at the Sixth and Brannan intersection. Data from the "hot spot" monitoring programs indicate that locations in San Francisco near streets with high traffic volumes and congested flows may experience violations of the eight-hour CO standard under adverse meteorological conditions.

The last sentence of the last partial paragraph, FEIR p. 40, continuing on to p. 41, is revised to read as follows; revised language is underlined:

> Three of the four prevailing winds, west, northwest, and west-northwest, blowing off the Pacific Ocean, reduce the potential for San Francisco to receive pollutants from elsewhere in the region.

The first full paragraph, FEIR p. 41, is revised to read as follows; revised language is underlined:

> San Francisco's air quality problems, primarily CO and particulates, are due largely to pollutant emissions from within the City. CO is a non-reactive pollutant and its major source category is motor vehicles. CO concentrations are generally highest during periods of peak traffic congestion. Particulate levels are relatively low near the coast, increase with distance inland, and peak in dry, sheltered valleys. The primary sources of particulates in San Francisco are demolition and construction activities, and motor vehicle travel over paved roads.

The following footnote replaces footnote /1/ on FEIR p. 42; revised language is underlined:

> /1/ State standards for particulate matter changed in 1983 and federal standards changed in 1987 to concentrate on fine particulate matter which has been demonstrated to have health implications when inhaled (PM-10). The previous state and federal particulate standards were 100 micrograms per cubic meter (ug/m^3) and 260 ug/m^3 of particulates, respectively.

The present state and federal PM-10 standards are 50 ug/m^3 and 150 ug/m^3, respectively, of fine particulate matter. Although both the previous and present particulate standards are measured in ug/m^3, under the PM-10 standards only those particulates 10 microns or less in size are measured. The BAAQMD (Thomas Perardi) has stated that TSP includes about 50% to 60% of particulates of 10 microns or less; thus, the TSP standards are generally equivalent to the PM-10 standards. BAAQMD is presently monitoring PM-10 at seven Bay Area monitoring stations, including the 16th and Arkansas station in San Francisco.

FEIR Appendix D, San Francisco Air Pollutant Summary 1981-1984, FEIR p. A-33, is replaced with an updated table, San Francisco Air Pollutant Summary, 1985-1987, included in Appendix A of this document, p. A-1.

G. HOUSING AND EMPLOYMENT

The Housing and Employment Setting, FEIR pp. 42-53, is deleted. Housing and employment issues are discussed IV. Environmental Impact, H. Population and Employment, pp. 55-59 of this document.

V. ENVIRONMENTAL IMPACTS

A. LAND USE AND ZONING

The following discussion of cumulative land use impacts are added as the first section under A. Land Use and Zoning, FEIR p. 54:

CUMULATIVE CONTEXT

The Downtown Plan EIR included forecasts of amounts of space of various types that would be built in the C-3 District between 1984 and 2000. The Final EIR for 524 Howard Street summarized this forecast for the relevant major C-3 District uses, primarily offices: Information from the Downtown Plan EIR included forecasts of amounts of space likely to be found in the C-3 District in the future and of the numbers of employees likely to be working in the C-3 District in the future. The forecasts of total space in the year 2000 were about 125,243,000 square feet in all uses including about 78,900,000 in office uses. Total employment in the C-3 District was forecast to be about 372,000 persons in 2000.

The Mission Bay EIR and the South of Market EIR include revised forecasts of space by use for the C-3 District and for the South of Market area; the Mission Bay EIR also includes forecasts for the rest of the Downtown & Vicinity.

These new forecasts account for the decline rather than growth in employment in the C-3 District and elsewhere in the Greater Downtown during the early 1980's, provide new forecasts of space expected over the timeframe, and account for specific buildings approved or under construction since the Downtown Plan EIR forecasts were prepared. The forecasts go beyond known and proposed building space, to forecast employment and space growth for a particular timeframe past that during which the known and proposed space would be built and absorbed. The forecasting method and background is described in the Downtown Plan EIR (pp. IV.B.1-8, IV.B.12-43, IV.B.54a-61, and Appendices G and H). The method was not changed in forecasts prepared for the South of Market and Mission Bay EIR analyses, but several changes were made in the analysis and results.

Baseline data providing existing employment and space in the analysis area were updated to 1985, resulting in the changes in forecasts for future C-3 District employment and space. Specific forecasts were also prepared for areas outside the C-3 District, first for the South of Market area and then for Mission Bay and the rest of the Downtown & Vicinity. Finally, for Mission Bay purposes only, employment and space growth and residence patterns were forecast on a regional basis for the estimated Mission Bay buildout year of 2020. The forecasts of future office space and employment, and an explanation of the methods used, can be found in the South of Market EIR, pp. 66-77 and Appendix B, and in the Mission Bay EIR Vol. I, p. II.31, Vol. II. pp. VI.B.13-23, VI.B.38-79, VI.B.106-112, and VI.B.119-123, and Vol. III, Appendix B (see especially Mission Bay EIR Appendix B, pp. XIV.B.24-30 for a comparison to the Downtown Plan EIR forecasts).

In summary, the forecasts show about 94,459,000 to 94,884,000 gross sq. ft. of occupied office space in the Downtown & Vicinity in the year 2000. The range is based on different amounts of office space in Mission Bay, depending on the development program approved and built. This is an increase of about 25,000,000-26,000,000 gross sq. ft. over the amount existing in 1985. The forecast accounts for demolition and new construction and for conversion of existing buildings from non-office to office uses in the future. It also accounts for absorption of several million sq. ft. of office space vacant in 1985 and another several million approved or under construction as of 1985. A five percent vacancy rate is assumed in year 2000. A relatively small amount of the total space would be proposed and approved between 1986 and 1997 (to be built and absorbed by 2000). (See Mission Bay EIR, Vol. III, pp. XIV.B.37-41.) About 75% of the office space would be in the C-3 District. The proposed project would contribute about one-quarter of one percent of the total future amount of office space in the Downtown & Vicinity.

The first paragraph under Land Use, FEIR p. 54, is revised to reflect recent development activity. Revised language is underlined:

In conjunction with other approved and proposed projects, the project would continue the trend of high-rise office development in the South of Market area. The project would be the first new highrise to be constructed on Howard Street west of Fremont Street. Four mid- to high-rise buildings are located in the former C-3-S Use District (now part of the C-3-O (SD) under the Downtown Plan implementing ordinances, adopted by the Board of Supervisors and signed by the Mayor in September 1985 and effective October 17, 1985) in the vicinity of Howard and Spear. All are built within the basic 7:1 FAR allowed in the former C-3-S district. The 301 Howard project, at Beale, approved in 1983, was recently completed; the 222 Second Street project, at Howard, is proposed in the C-3-O (SD) district west of the project site. The project would differ from existing development fronting on Howard St. in the project block. The project would represent the continuing expansion of the downtown financial district into the area surrounding the Transbay Terminal into an area identified for such development in the Downtown Plan.

A new paragraph is added on FEIR p. 54 to follow the paragraph revised above:

The project would be consistent with the description of the C-3-0 (SD) Downtown Office district described in Article 2, Section 210.3 of the City Planning Code. The Section describes the district, "playing a leading national role in finance, corporate headquarters and service industries and serving as an employment center for the region. . . ."

The following paragraph is added as the first full paragraph under Zoning, FEIR p. 55:

The City Planning Code contains controls regarding scale, intensity, and location of growth in downtown San Francisco; architectural preservation; open space; sunlight access; wind criteria; and transportation. The relationship of the project to selected sections of the City Planning Code is discussed here and summarized in Table 1A, pp. 55a to 55e.

The second full paragraph, FEIR p. 55 is revised to read as follows; consistent with the above insert, references to Table 1A are deleted. Table 1A, FEIR pp. 55a-55e, is renamed Relationship of the Project to the City Planning Code:

> The approximately 333-ft. project tower would comply with the 450-ft. height limit. The building length and diagonal dimensions would conform to bulk limits. The sponsor would seek exceptions to upper tower setback requirements as provided in Section 132.2(c), subject to approval under Section 309. Section 132.2(c) provides that exceptions may be allowed on lots with a frontage of less than 75 ft. under certain conditions.

On FEIR p. 57, the first full paragraph is revised to reflect the current status of South of Market planning, as underlined.

> The Department of City Planning anticipates that new, permanent zoning controls for South of Market will go into effect in <u>early 1989.</u>

B. <u>URBAN DESIGN</u>

Figures 13-16, FEIR pp. 60-61 and 62-63 illustrate views of the proposed project in street-level and long-range vantage points. Because of development activity since the FEIR was published, the following text discusses changes that would be apparent in those figures:

> Figure 13, FEIR p. 60, Rendering of Project from Mission Street: the 100 First Street building in the foreground is now complete.

> Figure 14, FEIR p. 61, Rendering of Project from Howard Street: the 100 First Street building is now complete; the then-proposed 535 Mission Street project has been withdrawn, and would not appear in this view.

> Figure 15, FEIR p. 62, View of Project from Twin Peaks: all proposed or under construction projects illustrated have been completed, except for the Palace Hotel Addition, which has been withdrawn. Revised Figure 15 is included on p. 21 of this document.

> Figure 16, FEIR p. 63, Rendering of Project from Potrero Hill, 100 First Street is completed; 535 Mission Street and 299 Second Street have been withdrawn and would not appear in this view. Revised Figure 16 is included on p. 22 of this document.

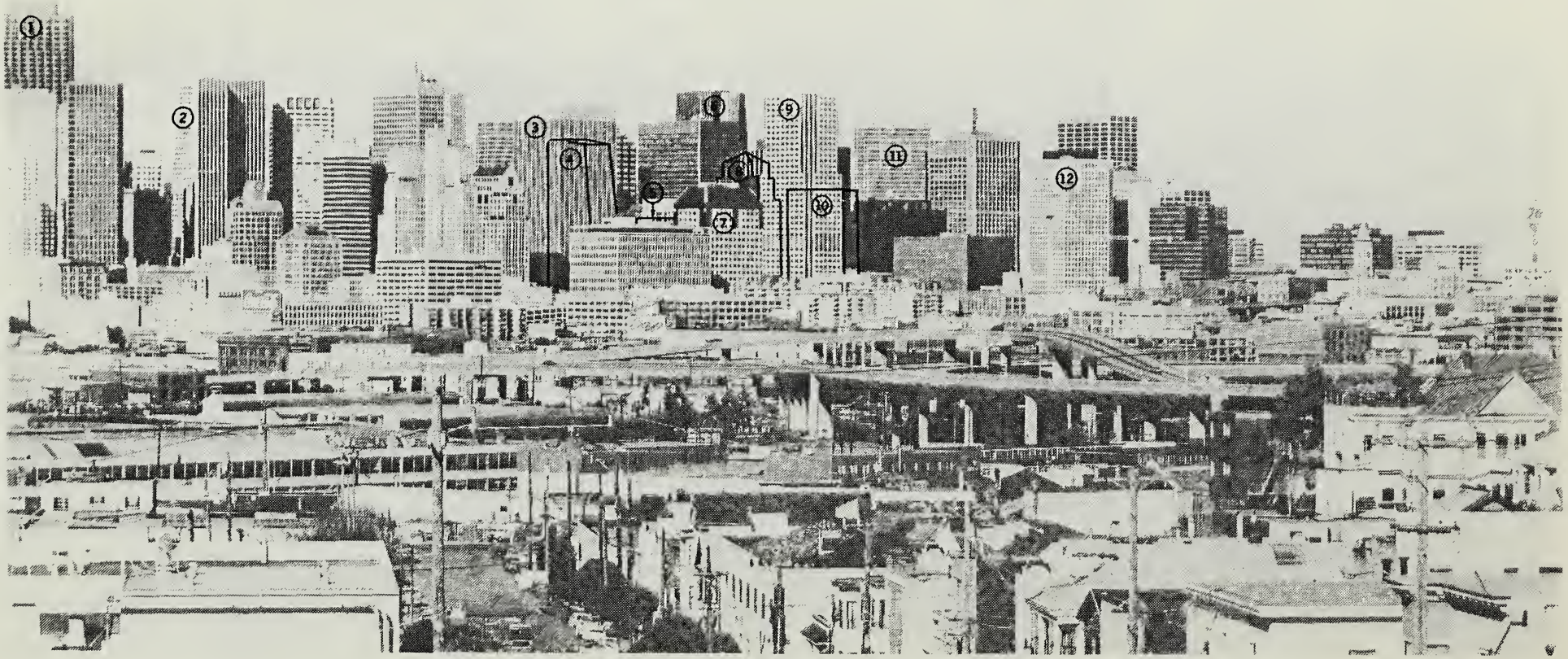
MAJOR STRUCTURES EXISTING, PROPOSED AND UNDER CONSTRUCTION

1 BANK OF AMERICA	4 PACIFIC GATEWAY	7 PACIFIC TELEPHONE
2 345 CALIFORNIA	5 100 FIRST STREET	8 524 HOWARD **(PROJECT)**
3 FREMONT CENTER	6 101 SECOND STREET (proposed)	9 222 SECOND STREET (proposed)

524 Howard Street

FIGURE 15 (REVISED)
VIEW OF PROJECT FROM TWIN PEAKS

SOURCE: Environmental Science Associates, Inc.



MAJOR STRUCTURES EXISTING, PROPOSED AND UNDER CONSTRUCTION

1 BANK OF AMERICA	4 101 SECOND STREET (proposed)	7 75 HAWTHORNE	10 524 HOWARD **(PROJECT)**
2 TRANSAMERICA	5 222 SECOND STREET (proposed)	8 100 FIRST STREET	11 EMBARCADERO 4
3 525 MARKET	6 101 CALIFORNIA	9 FREMONT CENTER	12 PACIFIC GATEWAY

524 Howard Street

FIGURE 16 (REVISED)
VIEW OF PROJECT FROM POTRERO HILL

SOURCE: Environmental Science Associates, Inc.

C. SHADOW AND WIND

The first paragraph under Shadow, FEIR p. 58 continuing on to p. 68, is revised to reflect that the 535 Mission St. project is no longer active. Revised language is underlined.

> Under the Downtown Plan, shadows from new developments on publicly accessible open spaces must be minimized. Open spaces in the project vicinity include the Transbay Terminal unloading area, at the southeast corner of First and Mission Sts., and the Golden Gate University entry and seating area on the north side of Mission St. near First St. The 100 First St., recently completed at First and Mission Sts. includes publicly accessible open space on the roof of the two-story garage located west of the office tower. Caltrans is considering redesigning the Transbay Terminal unloading area in order to allow additional bus use and restrict pedestrians to the Mission St. sidewalk and an elevated bridge across Mission St.

The reference to City Planning Code Section 263.8, in the first full paragraph, FEIR p. 68, is corrected to read "Section 263.10."

The following paragraphs are added after the first partial paragraph on FEIR p. 77:

> Open Space
>
> The shadow studies show that the project would add shadows to open space areas in the project vicinity. The project would add new shadow to the second-floor open space of the 100 First St. project, a maximum of about 1,800 sq. ft., about 15% of the open space, between 10:00 a.m. and 11:00 a.m. in March and 11:00 a.m. and 12:00 noon in September. The project would shade about half of the 100 First St. roof-top open space in December between 10 a.m. and 11 a.m. It would shade about one-third of the Transbay Terminal loading area between 12 noon and 1:00 p.m. in December, which would also be shaded by 100 First St. and the terminal itself.
>
> Proposition K
>
> In June 1984, the voters of the City and County of San Francisco approved Proposition K, the Park Shadow Ban initiative ordinance prohibiting the issuance of building permits for structures that would shade property under the jurisdiction of, or designated to be acquired by, the Recreation and Park Commission unless the City Planning Commission determines that such shade would have an insignificant adverse impact on the use of such property. The project would add no new shadows to any property under the jurisdiction of, or designated for acquisition by, the Recreation and Park Commission, during the hours specified by Proposition K (one hour after sunrise to one hour before sunset at any time of the year).

D. CULTURAL RESOURCES

The second paragraph, FEIR p. 79, is revised to reflect current information on cultural resources potential in the South of Market area. Revised language is underlined:

> The site could contain cultural resources from the Prehistoric Period (ca 8000 B.C. - 1775 A.D.), the City Building Period (1858-1887), the Late Nineteenth Century Period (1887-1906) and, perhaps, the Twentieth Century Period (1906-present)./1/ While earlier archival research produced no evidence to suggest that these materials would be noteworthy from either a historical or archaeological perspective, discovery of a prehistoric shellmound in subsurface locations at 49 Stevenson Street in May 1986 about two blocks north of the project site, and at other South of Market locations suggest that other deeply buried prehistoric sites may exist in the project vicinity, even in places subject to previous grading./2/

The following footnote /2/ is added after footnote /1/ FEIR p. 79:

> /2/Allen G. Pastron, Ph.D., President, Archeo-Tec, letter to Brian Boxer, EIP Associates, October 17, 1988. This letter is on file and available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister.

E. TRANSPORTATION

(The following text replaces the Transportation Impacts text, FEIR pp. 79-108. The primary changes from the FEIR are updated modal split data for project and cumulative trip generation, and an added discussion of Mission Bay EIR and South of Market EIR cumulative analyses. Discussion of project-specific impacts on parking, loading, and pedestrian issues are the same as the FEIR; they are included here for completeness. FEIR Tables 3-8 are deleted, and replaced with Tables S-1 to S-3 of this document.)

CUMULATIVE CONTEXT

Introduction

The transportation sections of the Mission Bay and South of Market Area Plan EIRs address various transportation impacts in 2000 and 2020. The Mission Bay transportation impact analyses evaluate travel generated by Mission Bay in the context of growth in travel projected

for the rest of the City and Bay Area. The South of Market analyses do the same for that area. It is growth in the City and region that would result in the greatest impact on most of the transportation systems studied.

The two EIRs use slightly different analysis methodologies, but employ the same basic screenline approach to study regional transportation impacts of San Francisco employment growth. Results differ somewhat, based on the differences in methods. The differences are generally less than five to ten percent; this difference is well within the range of accuracy of forecasts to scenarios 15 years away. Therefore, the two sets of results are compatible. This summary of cumulative transportation effects will report largely from the Mission Bay EIR, with South of Market EIR results included where there is notable additional information.

In summary, both EIRs show that by 2000, congested highway conditions would result in a shift from autos to higher use of transit and ridesharing by travelers from the Downtown & Vicinity. The East Bay would be the most congested corridor, the Peninsula would be the least. By 2020, travel demand would exceed the capacity of regional transportation systems. To serve regional growth, expanded transit and freeway systems would be required.

The proposed project at 524 Howard Street is expected to be completed, occupied and the space new to downtown San Francisco absorbed by 2000. Therefore, the impacts of the project and its contribution to cumulative transportation impacts are analyzed largely in the 1985-2000 context. The information from the Mission Bay EIR for 2020 is presented for the reader's information and to provide a very long-term picture as it is presently reported.

The Analysis Years

The analysis includes studies of transportation conditions in the year 2000, and, in order to account for buildout of the Mission Bay planning area, in the year 2020 in that EIR. Analyses for the 1985-2000 timeframe can rely on reasonably confident estimates of regional transportation capacity improvements as defined by the regional agencies' highway and transit planners. There are no regional transportation plans or policies for 2020. Therefore, the Mission Bay EIR use a different approach for this longer-term analyses. Rather than reporting the impacts of future travel on existing or planned transportation systems, as is done for 2000,

the estimates of 2020 travel conditions are used to identify the types of transportation improvements likely to be necessary to serve growth in travel between 2000 and 2020.

For both forecast years, 2000 and 2020, the projections of travel assume that many commuters from the Downtown & Vicinity who would otherwise drive, would shift to increased use of transit and ridesharing in response to growing highway congestion and the availability of improved transit service. The history of commuting to the Downtown & Vicinity shows that substantial shifts in travel from autos to other modes of travel have occurred when transit and ridesharing systems were improved. In addition, in the future, highways and bridges leading to/from San Francisco are expected to be considerably more crowded, and transit capacity is expected to be increased between downtown San Francisco and other Bay Area locations, making transit an attractive alternative to crowded freeways. The travel forecasting procedures therefore assume that shifts from auto to ridesharing and transit would continue into the future. (Mission Bay EIR, Vol. II, p. VI.E.52; South of Market EIR, p. 109-112, C-39.)

Regional Travel

Regional travel was analyzed for each of the three major approaches to San Francisco: the North Bay via the Golden Gate Bridge; the East Bay via the San Francisco-Oakland Bay Bridge; and the Peninsula via the U.S. 101 and I-280 freeways. The analysis for 2000 is based on comparing the projected demand for transportation service with the capacities expected to be available. The analysis for 2020 uses the transportation system capacities developed for 2000 as a base and identifies additional capacity above the 2000 level that would be needed to serve the travel demands of 2020.

The regional travel forecasts assume that where severe congestion is projected for the highway system and where parallel transit and ridesharing systems are available, travelers would choose to shift from their autos to fill the capacity available in transit and ridesharing systems. Those shifts are assumed to be made by travelers from the Downtown & Vicinity only, because they would have more transit and ridesharing options than travelers from other parts of the City or region. The shift to transit and ridesharing would be greatest for travel to the East Bay, somewhat less to the North Bay, and none would be necessary for travelers to the Peninsula by 2000.

Growth in the entire Downtown & Vicinity and the rest of the region, rather than growth in South of Market or Mission Bay alone, would be the primary source of travelers trying to cross the Golden Gate and Bay Bridges, and to use the U.S. 101 and I-280 freeways at peak hours. (Mission Bay EIR, Vol. II, pp. VI.E.31-34, 50-52 56-83, and 211-214; South of Market EIR, pp. C-47.)

Downtown & Vicinity - Muni

To analyze cumulative impacts on Muni, individual Muni routes were grouped on the basis of the location of their alignments and stops into the "Northeast," "Northwest," "Southwest," and "Southeast" areas of San Francisco, referred to as "screenlines." By 2000, ridership would generally be accommodated on the Muni screenlines. Slight overcrowding would occur on the Northwest screenline during the p.m. peak hour, and on the Northeast screenline during the p.m. peak period. However, by 2020, all but the Southwest screenline would be operating beyond Muni's load standard. Additional service required could include new light rail service to the Geary Boulevard corridor to the Northwest, and to the Bayshore corridor in the Southeast area of the City. (Mission Bay EIR, Vol. II, pp. VI.E.31-36, 62-67, 79, 93-99, 103-104, 115-124, 217, and 231; South of Market EIR, pp. 100-102, 114-117, C-20 to C-21, and C-37.)

North Bay Corridor

The Golden Gate Bridge and its approaches operated with moderate congestion (driving speeds of about 35 to 45 mph) in peak hours in 1985. By 2000, heavy congestion on the bridge (a driving speed of about 30 mph) would last about two hours if additional transit capacity between downtown and the North Bay were provided, and a substantial shift from autos to transit and ridesharing were made by travelers from the Downtown & Vicinity. If no shift from 1985 transit use levels were to occur, the period of heavy congestion on the Bridge would last for about four hours in 2000.

Golden Gate Transit indicates that it would be able to increase its bus and ferry capacity between downtown and the North Bay by 2000 in response to the demand generated. Golden Gate Bus ridership would about double and ferry ridership would grow by about 60% from 1985 to 2000. Ridesharing is projected to increase by 7 to 15% between 1985 and 2000 in the North Bay.

By the year 2020, heavy congestion on the Golden Gate Bridge could last four hours, assuming the levels of transit and ridesharing used in 2000, if there were no additional transportation improvements between 2000 and 2020. By that time, the need to consider major new transportation infrastructure and transit systems will have become apparent.

That next phase of regional transportation planning could consider adding a second deck to the Golden Gate Bridge to provide transbay capacity for new bus and carpool lanes, or a light-rail line, either of which would extend between downtown San Francisco and Sonoma County. (Mission Bay EIR, Vol. II, pp. VI.E.31-34, 39, 41, 71-78, 80-82, 84-89, 94-100, 103-111, 114-125, 129-137, 214-215, and 225-226; South of Market EIR pp. 98-100, 103-105, 112, 118, 119-124, and C-41 to C-42.)

East Bay Corridor

There is virtually no room for additional vehicle traffic on the eastbound Bay Bridge approaches between 4:00 p.m. and 6:00 p.m. While the growth in travel demand on the Bay Bridge from the Downtown & Vicinity could be served by shifting those commuters from autos to transit and increasing ridesharing, trips to or from other areas of the region are not well served by transit and would continue to be made primarily in private vehicles.

Even with the substantial shift to transit and ridesharing assumed in the analysis, the Bay Bridge would operate at capacity for about 4.5 hours in 2000, resulting in severe congestion on the San Francisco approaches to the bridge, travel speeds of less than 30 miles per hour, and heavy congestion on the bridge itself every weekday afternoon. Were the shift to transit and ridesharing from 1985 levels not to occur the period of severe congestion in 2000, would extend for over 5.5 hours.

By 2000, the numbers and proportion of commuters from the Downtown & Vicinity on BART during the p.m. peak period would be substantially higher. The number of trips on AC Transit would increase by about 65% based on the service available and the need to accommodate some BART riders by 2000.

The ratio of passengers to seats on BART would increase from 1.30 in 1985 to 1.63 in 2000. AC Transit loads would increase from 0.85 passengers per seat in 1985 to 1.30 in 2000. The capacity of BART is based on the maximum

capacity of BART's computer system to track trains in the transbay tube. The crowding projected for BART could not be fully mitigated during the peak period because of the systems technical operating limits.

An increase of seven percent in ridesharing from the Downtown & Vicinity across the Bay Bridge is projected for 2000. Even with substantial shifts to transit and ridesharing by commuters from the Downtown & Vicinity, by 2020 severe congestion on the Bay Bridge and its approaches would last for over five hours. The number of regional vehicle trips which could not be served by the Bay Bridge would grow from about 3,000 peak-period vehicles in 2000 to between 5,500 and 5,800 in 2020.

Mitigating those levels of congestion would require consideration of major changes to the regional transbay transportation system connecting the West Bay and East Bay. Virtually all of the concepts would require the City to work with MTC, Caltrans, and local government agencies to undertake the regional planning needed to expand transbay transportation capacity. (Mission Bay EIR, Vol. II, pp. VI.E.31-34, 37-41, 71-78, 80-82, 87-91, 94-98, 100-101, 103-123, 126-127, 129-131, 133-140, 215-216, and 226-230; South of Market EIR pp. 96-100, 102-104, 111-124, and C-42 to C-45.)

Peninsula Corridor

Between 1985 and 2000, traffic would increase on U.S. 101 and Interstate 280, the freeways serving the Peninsula. However, there would be less congestion on those routes at the San Mateo County Line than on the Golden Gate and Bay Bridges. Both U.S. 101 and I-280 were only moderately congested at the San Mateo County line in 1985. In or near San Francisco, the capacity of local streets, U.S. 101, and I-280 would be sufficient to handle future travel demand; the switch from highway to transit modes by Downtown & Vicinity commuters assumed for the Golden Gate and Bay Bridges would not be required for the routes serving the Peninsula. The transit analysis for 2000 and 2020 in this regional corridor therefore uses the same rates of transit use as found in 1985.

U.S. 101 at the San Mateo County line would operate at capacity for about 2.5 hours in 2000, with heavy congestion and speeds of 30 miles per hour occurring during that afternoon peak period. By 2020, heavy congestion on U.S. 101 would last for over four afternoon hours. I-280 would operate with only moderate congestion at the county line in 2000 and 2020 with speeds

averaging 35 to 45 miles per hour throughout the peak period. The congestion projected in 2020 would be reduced if commuters from the Downtown & Vicinity chose to increase their use of transit or ridesharing above the 1985 levels.

The use of transit to the Peninsula would increase. The level of service on transit would remain high, as there would be no system where ridership would be greater than available seats. Relocation of the CalTrain Station to Seventh and Townsend under some Mission Bay development scenarios would reduce potential use of that transit service; use of BART and SamTrans would grow by about 40% while CalTrain ridership would grow by just 4%. In 2020, CalTrain, BART and SamTrans would carry even larger loads, but would continue to operate below capacity. (Mission Bay EIR, Vol. II, pp. VI.E.31-38, 42-43, 61-62, 71-82, 85-89, 91-92, 94-99, 101-104, 106-109, 113-122, 128-137, 216-217, and 230-231; South of Market EIR pp. 98-105,112-124, and C-43 to C-45.)

Regional Highway Constraint Points

As a result of growth in regional travel demand, the following freeway segments could constrain San Francisco travel: the I-80/580/I-880 interchange in Oakland; the Caldecott Tunnel on State Route 24 I-80 in Alameda and Contra Costa Counties, U.S. 101 in Marin County, and U.S. 101 south of I-380 in San Mateo. (Mission Bay EIR, Vol. II, pp. VI.E.133-140.)

Local Streets and Transit

Major Intersections

The street networks would be improved in a portion of the Mission Bay area under the I-280 Transfer Concept Program (TCP), which includes removal of the I-280 stub between Third and Sixth Streets, widening and improving King Street, construction of new I-280 on- and off-ramps from King Street. Extension of Muni Metro light rail service to the CalTrain terminal (at Fourth and Townsend Streets) is also expected.

The point of greatest congestion within Mission Bay in 1985 was the intersection of Third and Berry Streets. That intersection was heavily congested because it served both city traffic on Third Street and traffic destined for downtown on the I-280 freeway. With the I-280 ramps

relocated from Berry to King Street as proposed, the intersection of Third and King Streets would replace Third and Berry as the point of greatest congestion within Mission Bay. The intersection of Third and King would be severely congested in all Mission Bay Alternatives by 2020. Most of the traffic passing through this critical intersection would not be destined for Mission Bay, but would be traffic from other areas, including particularly the downtown, using the I-280 freeway interchange or traffic which needs to pass through Mission Bay on its way to other parts of the City.

A second intersection along four-lane King Boulevard at Fourth Street would also be congested by 2020. That congestion would again be caused primarily by traffic not destined to Mission Bay. Congestion projected for King Street and its intersections in the Mission Bay Project Area could be mitigated with a six-lane roadway, with parking permitted only at off-peak hours. To mitigate congestion projected for Third and Mariposa Streets, that intersection could be widened to allow double southbound right-turn lanes on Third and a separate eastbound left-turn lane on Mariposa.

It is expected that operating conditions on local South of Market streets and intersections not serving freeway ramps would continue to operate in a generally free flowing manner in the future, at least to 2000. Severe congestion would continue to occur in both 2000 and 2020 on several of the James Lick (I-80) freeway approaches in the South of Market Area near Mission Bay. Those streets and freeway ramps serve traffic destined for the Bay Bridge and Peninsula. Several of those streets are heavily congested now. The number of severely congested I-80 approach intersections would increase by 2000 and increase again by 2020, whether or not Mission Bay is developed.

First and Harrison, Fifth and Bryant, and Sixth and Brannan presently operate at LOS F and would continue to do so in the future. Other intersections at or near freeway ramps, such as Mission and Beale and Fourth and Harrison would deteriorate to LOS E or F in the future. Intersections near freeway ramps are often affected by freeway access queues, as cars waiting to enter the freeway back up to or through these intersections. This affects local traffic attempting to use streets in these areas. Some traffic will shift and use less congested routes in the future as this problem increases. Continued enforcement of the ordinance passed in 1987 prohibiting blocking an intersection should help to limit this problem.

Mission Bay growth would account for less than 5% of total traffic at the freeway approaches and never more than 15% of total traffic on the major through routes within the Mission Bay Area. Growth in the South of Market area would account for a smaller proportion of total traffic at freeway approaches than would Mission Bay. The 524 Howard Street project would contribute less than one percent of the traffic at these intersections. (Mission Bay EIR, Vol. II, pp. VI.E.2-13, 140-148, 166-175, 199-201, and 218-219; South of Market EIR, pp. 105-106, 124-126, and C-47 to C-48.)

Local Transit

For the local street system to operate at the level described above, there would have to be a high level of public transit use in Downtown & Vicinity. In 1985, about 55% of all afternoon peak-hour outbound trips from the Downtown & Vicinity were on transit. That level of transit could grow to about 70% of all trips, based on the increased capacity of transit systems expected to be available by 2000.

Muni proposes increased route and service capacity in the year 2000, in the Mission Bay Area. This increased capacity would be able to accommodate demand from growth in that area, except for the 47-Van Ness line. That line would exceed Muni's load factor standard because it would carry loads more than 25% over seated capacity if housing were built in the area.

The Muni Metro expansion to Mission Bay would also serve the southern portions of the South of Market area. An improvement in the southwest corridor Muni service would also occur as a result of completion of the Muni Metro turnaround at the foot of Market St. in the future. Other Muni corridors are expected to remain at current levels of service at least through year 2000. (Mission Bay EIR, Vol. II, pp. VI.E.148-152, 175-178, 201-202; South of Market EIR, pp. 112-117, C-45 to C-46).

PROJECT IMPACTS

Travel Demand

On the basis of land use, the project would generate about 5,440 net new person trip-ends (pte) per day./1/ Since the site is currently occupied by a parking lot, no existing travel has been sustracted from project-generated travel, as existing trips would still be made to the area./2/ The

TABLE S-1: PROJECTED OUTBOUND TRAVEL DEMAND BY MODE FROM 524 HOWARD ST. (pte)/a/

Travel Mode	P.M. Peak Period/b/ 1985	P.M. Peak Period/b/ 2000/c/	P.M. Peak Hour /b/ 1985	P.M. Peak Hour /b/ 2000/c/
Drive Alone	156	122	89	69
Car/Vanpool	97	93	56	53
Muni	216	178	134	110
BART	135	185	90	121
AC Transit	49	61	35	43
SamTrans	8	8	7	7
SPRR (Caltrain)	15	15	11	10
GGT Bus	22	34	16	24
Ferry	4	5	3	4
Other	53	54	29	28
TOTALS (rounded)	755	755	470	470

/a/ Person trip-ends.
/b/ The peak hour occurs during the two-hour peak period of 4:00 p.m. to 6:00 p.m.
/c/ The year 2000 modal split accounts for changes in travel behavior which are assumed to occur as a result of growth in Downtown & Vicinity, as described in Mission Bay EIR, Vol. II., pp. VI.E. 53-54.

SOURCE: Environmental Science Associates, Inc.

trip generation calculations include travel to and from the project site by both visitors and employees of the project. Additionally, although expressed on a person trip-end basis, the trip generation includes all travel to and from the project in autos, service vehicles and trucks, on public transit and other modes (i.e., walking, bicycles, taxis, etc.). Projected outbound (peak commute direction) p.m. peak-period and peak-hour trips by mode expected to be generated by the project are shown in Table S-1. About 755 new outbound trips from the project would occur during the p.m. peak-period, of which about 470 would occur in the p.m. peak hour./3/

Assignments to travel modes for the project have been made on the basis of modal splits from the Mission Bay EIR for the years 1985 and 2000./4/ The 1985 modal split has been used for the purpose of identifying impacts at the single-project level (as opposed to impacts at the cumulative level). The year 2000 modal splits have been applied to the project travel for the purpose of comparing project travel with cumulative future travel demand on the transportation systems serving San Francisco. The modal splits used were derived from aggregate data for the C-3 District, the zoning district that contains the project site, and the rest of Downtown & Vicinity. The actual modal split for travel from the project may vary from the average. However, because the travel demand forecasts used to derive the average modal split data implicitly include the travel from the project, application of the average modal split data to project travel has been assumed to be sufficiently accurate for purposes of comparison.

Master Plan Policies

The project would relate to Objective 1, Policy 7 of the Transportation Element of the San Francisco Master Plan, to, "seek means to reduce peak travel demand."/5/ As required by Section 163 of the City Planning Code, a member of the building management staff would be designated as a "transportation broker" to coordinate measures that are part of a transportation management program, such as: encouraging a flexible time system for employee working hours (to be developed by project tenants in consultation with the Department of City Planning) to reduce peak-period congestion by a planned spreading of employee arrivals and departures; encouraging transit use through the on-site sale of BART, Muni, and other carriers' passes to employees; and encouraging employee carpool and vanpool systems in cooperation with RIDES for Bay Area Commuters by providing a central clearinghouse for carpool and vanpool information.

General Objective 1, Policy 6 of the Transportation Element states as a goal to "develop a financing system for transportation in which funds may be allocated without unnecessary restriction for priority improvements according to established policies." (p. 10) The project sponsor has agreed to participate in funding measures for downtown transit funding, proportional to demand created by the project.

The Downtown Plan discourages, "new long-term spaces in and around the downtown" (p. 126 of the Downtown Plan). The project would add 45 parking spaces which would be for short term use, and would remove 100 spaces. Parking spaces would be controlled to assure priority for vehicles driven by the physically handicapped, vehicles using spaces for short-term rather than all-day parking, and vanpool and carpool vehicles. The parking rates would be structured to favor short-term parking (see mitigation measure FEIR p. 141).

SPRR/Caltrain; Proposed Terminal Relocation

The project would affect a proposed relocation of CalTrain's downtown San Francisco train terminal. A possible extension of the CalTrain tracks to a proposed new underground terminal adjacent to and south of the Transbay Terminal is currently under study. The main institutional advocate of this proposal appears to be the State Department of Transportation ("Caltrans") which has had prepared two interrelated terminal relocation studies focused on this site./6/ This CalTrain extension to a new underground terminal was included in one of the alternatives studied in the I-280 Transfer Concept Program./7/ In addition, the proposed CalTrain extension to a new underground terminal adjacent to the Transbay Transit Terminal has been included in one of the alternatives under evaluation by the Metropolitan Transportation Commission in its Peninsula Mass Transit Study, being conducted pursuant to State Senate Concurrent Resolution No. 74./8/

The San Francisco Board of Supervisors adopted Resolution 124-84, on February 14, 1984, in support of a downtown terminal. In May 1987, the Metropolitan Transportation Commission adopted a motion requesting further information evaluating the effects of a proposed extension of CalTrain to the Transbay Terminal. Consequently, a Peninsula Corridor Joint Powers Board (JPB) was established in July 1987 for an interim period, consisting of representatives from Santa Clara County Transit District, SamTrans, and the City and County of San Francisco. The JPB is authorized to complete studies necessary to analyze such an extension and the acquisition requirements involved. In 1989, the JPB will be undertaking a Peninsula Commute Service San Francisco Downtown Station Relocation Study that is expected to analyze station location alternatives, including Seventh and Townsend, and several routes to a Market Street terminal or to the Transbay Terminal./9/

The proposed 524 Howard St. project site sits astride a portion of the proposed underground terminal location at the Transbay Terminal. If the project's construction could not accommodate the terminal, the project's construction could preclude relocation of the CalTrain Downtown Terminal to that proposed site. The Transbay Transit Terminal location was the only remaining alternative under consideration by Caltrans in 1985 for relocation of the CalTrain to an underground station in the downtown core./10/ The sponsor of the 524 Howard St. project proposes to accommodate the terminal in the construction of basement parking levels. As such time as a terminal were constructed, basement parking would be eliminated in the 524 Howard St. project.

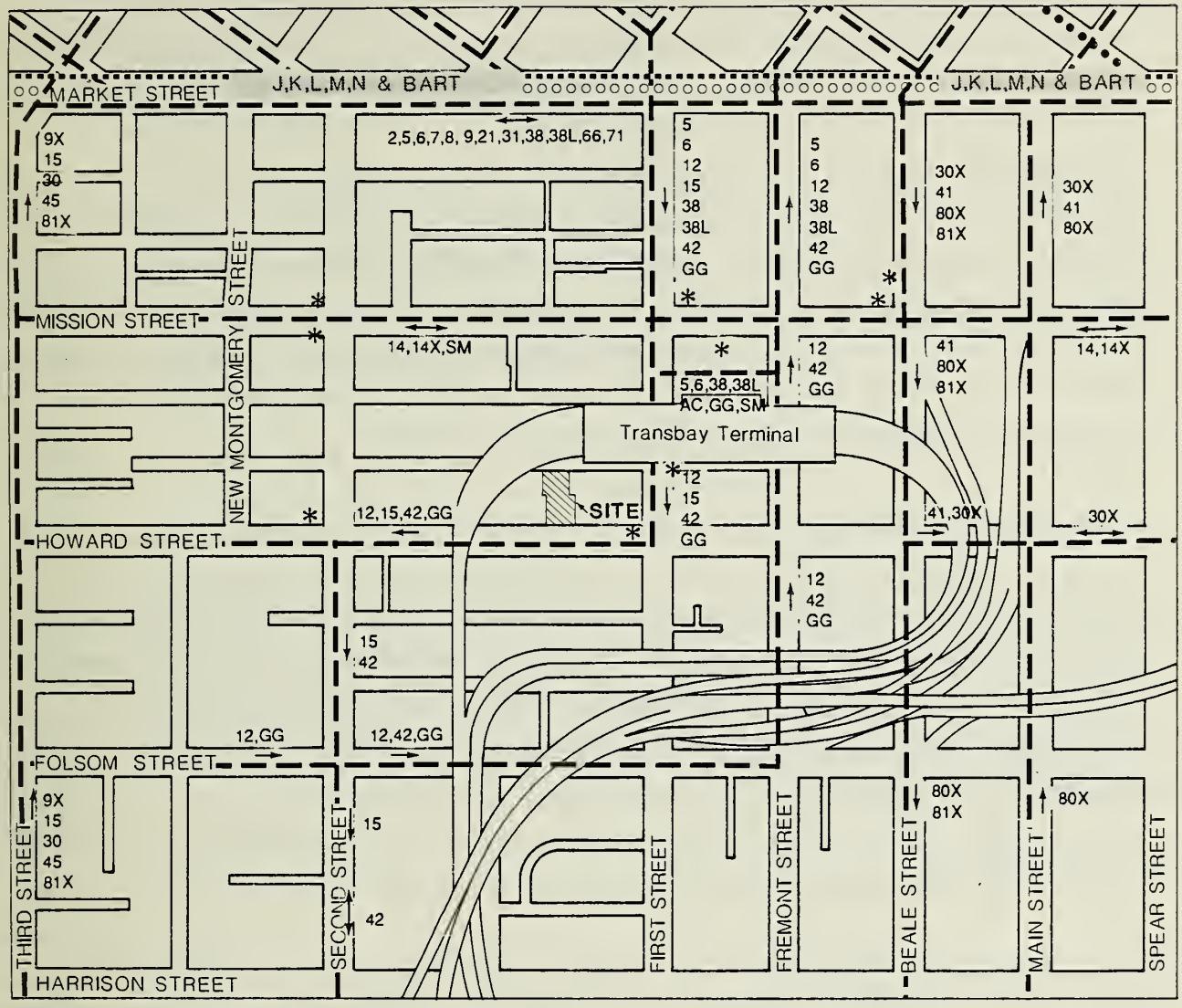
If the CalTrain Terminal were constructed in the proposed or some other central downtown location, ridership could increase above that projected under the Downtown Plan as analyzed in the Downtown Plan EIR. If the terminal were not constructed in a central downtown location, existing conditions and ridership projected in the Downtown Plan EIR would not change.

Mission Bay EIR Alternatives A and B propose relocation of the Caltrain terminal to Seventh and Townsend Streets. (It would remain at Fourth and Townsend in Alternative N.) The Mission Bay EIR conservatively assumes a 22% reduction in train ridership because of this relocation, and resulting increases in automobile trips and street and freeway congestion. The Mission Bay EIR discusses retaining a Fourth and Townsend terminal location via a tunnel to mitigate these impacts, or increased Muni bus service to a Seventh Street station to provide travel times to downtown or South of Market destinations equal to those from Fourth and Townsend.

Transit

Local Transit

There are about ten Muni routes with stops within one block of the project site. The Transbay Terminal is located two blocks northeast from the site. Muni Metro and BART service in the Market St. subway are accessible via the Montgomery St. station (two blocks north of the site). Figure 21, p. 37, shows transit routes in the project area. Photographic examples of p.m. peak-hour loadings on Muni vehicles are shown in FEIR Appendix D, Figures D-1, pp. A-45 to A-47.



BART AND MUNI METRO STATION

BART ROUTE

MUNI METRO ROUTE

TRANSIT ROUTE

CABLE CAR ROUTE

1,2,3,J,K,L ROUTE DESIGNATION

→ ROUTE DIRECTION

* BUS STOP WITHIN ONE BLOCK OF SITE

AC AC TRANSIT

GG GOLDEN GATE TRANSIT

SM SAMTRANS

0 FEET 500

524 Howard Street

FIGURE 21
TRANSIT ROUTES IN THE PROJECT AREA

SOURCE: MUNI San Francisco Street and Transit Map, 1988;
MUNI Service Changes, October 1988

During the p.m. peak hour in 1984, most of the transit agencies were found to be operating in Level of Service (LOS) D or better. The exceptions include BART Transbay, where conditions were found to be at LOS F, and Muni in the northwest and southwest corridors, where operations were found to be in LOS E. Table D-1, FEIR Appendix D, p. A-44, contains descriptions of the various LOS for bus transit. In the p.m. peak hour in 2000, the project would generate about 110 new Muni trips and about 120 new BART trips outbound from the project site. Addition of the project p.m. peak-hour Muni riders to the existing (1984) Muni ridership would not increase the loading ratios on any corridors, and thus would not change the LOS. The number of Muni riders from the project would not be sufficient to affect Muni operations in any of the four corridors. Addition of BART riders from the project to the existing BART ridership would not increase p.m. peak hour Transbay or westbay loading ratios or change LOS.

Transit Corridor Analysis

The project would contribute to increases in transit ridership in the major transit corridors leading from downtown San Francisco. Existing peak-period and peak-hour transit ridership would be increased by about 0.5%. A ridership increase of this magnitude would not be measurable against the day-to-day fluctuations in transit ridership and would not have a noticeable effect on transit LOS.

Project Transit Costs

Muni. The estimated 1981-82 (most recent available) net marginal cost (or increase in the deficit for Muni operations) per additional ride is $0.50./11/ This deficit-per-ride figure, because it is a marginal cost, is appropriate for small increases in Muni ridership (such as that requiring one or a few additional vehicle trips). Assessments of costs that would result from cumulative development require the inclusion of additional cost factors and may be best projected using average costs./12/ It is reasonable to conclude that average costs would be significantly higher than marginal costs.

The project would generate about 44,900 peak-period, peak direction rides per year in the year 2000, which would generate a cost deficit to Muni of about $22,400, assuming that the cost per ride deficit remains the same./13/ The extent to which this project would offset this deficit

through its contributions to the General Fund, the Transit Impact Development Fee, and sales tax revenues is not known. State and federal funds to Muni are decreasing, and the City is reviewing other options for increased revenues.

The sponsor would be required to pay a one-time Transit Impact Development Fee (TIDF) to finance the increased cost of Muni services necessitated by the project, at a rate of $5.00 per gross square foot of net new office construction. Based on the $5.00 rate, the project would yield about $1.1 million. The final determination of TIDF would be made on the basis of a more detailed review of architectural plans submitted to the City.

BART. For the year ending June 30, 1985, the average net operating deficit per passenger trip for BART was about $1.20./14/ On the basis of about 216,700 rides per year in the year 2000, the estimated annual BART deficit attributable to the project would be about $260,000, assuming that the cost per ride deficit is the same./15/ The project would generate a total of about $10,500 in revenues to BART, including about $2,900 in property tax revenues, and about $7,600 from the 75% of the 0.5% transit sales tax allocated to BART. This amount does not include the remaining 25% of the 0.5% BART sales tax revenue distributed by MTC among BART, Muni and AC Transit. After subtraction of BART's revenues from sales and property taxes that would be generated by the project, the net operating deficit of BART due to the project would be about $257,100. BART's operating deficit per passenger is likely to decline in real terms as planned service improvements become operational in the future.

Traffic

Local Intersection Traffic

The Second and Howard Sts. intersection currently operates at Level of Service (LOS) "A" with minimal traffic delays. Pedestrian traffic in crosswalks at Howard St. delays turns on and off Howard St., resulting in an LOS "C" operation for turning movements. Project impacts at the intersection closest to the project site (Second and Howard Sts.) would primarily result from service-vehicle and pedestrian traffic and from traffic using the proposed 45 on-site spaces. However, peak-hour traffic to the project site itself would be expected to decrease in the future, because of the decrease in parking spaces on-site and the change from mostly long-term parking spaces to mostly short-term parking spaces, and therefore, peak-hour traffic from the project site

at local intersections would be less than at present. The existing on-site 100-space parking generates primarily peak-hour traffic since it provides mostly long-term commuter parking. The proposed 45 spaces in the project would be primarily for short-term parking (the rate structure would be such as to discourage long-term parking). The 45 short-term spaces would generate more trips per day through the local intersections than the 100 long-term spaces, but fewer peak-hour trips, thus there would be less impact through the intersection than there is currently. Most persons coming to the project and desiring long-term parking would be expected to park elsewhere (probably in lots to the south) rather than drive to the site and pay a higher rate, and these trips would be dispersed among intersections throughout a larger area.

Freeway On-Ramp Analysis

Traffic operations at intersections serving freeway on-ramps near the project site are shown in Table S-2, p. 41. LOS descriptions are shown in Tables D-3 and D-4, FEIR Appendix D, pp. A-52 and A-53. The project would incrementally contribute to traffic at freeway on-ramps during the p.m. peak hour. The intersection of Fourth and Harrison Sts. currently operates in LOS C conditions during the p.m. peak hour; however, congestion on the James Lick Freeway (I-80) sometimes backs up traffic onto surface streets, including the Fourth and Harrison Sts. intersection, during the p.m. peak hour. During these periods, the two right turn lanes on Fourth St. operate in LOS E/F conditions. The intersection of First and Harrison Sts. currently has LOS F conditions during the p.m. peak hour. Operations at LOS F represent unacceptable delay to motorists. Queues of vehicles are present during the p.m. peak hour on the approaches to the on-ramp at First and Harrison Sts. Vehicles from the project would be expected to contribute to the existing jammed conditions at this intersection. Project effects at the Fourth and Harrison Sts. intersection would not be sufficient to change the LOS during the p.m. peak hour; however, the volume-to-capacity (V/C) ratio would increase (as shown in Table S-2).

Freeway Corridor Analysis

The project would contribute to increases in traffic on the major freeways serving downtown San Francisco. Traffic generated by the project would increase total traffic on major freeways during the p.m. peak period and the p.m. peak hour by about 0.2% or less. Such increases would not be measurable against the day-to-day fluctuations in traffic volumes. Because the Bay Bridge p.m.

TABLE S-2: PROJECTED PEAK-HOUR INTERSECTION VOLUME-TO-CAPACITY RATIOS (V/C) AND LEVELS OF SERVICE (LOS)/a/

Intersection	Existing V/C	Existing LOS	Existing + Project V/C	Existing + Project LOS	Mission Bay (2000) V/C	Mission Bay (2000) LOS
Fourth and Harrison Sts.	0.72 /b/ 0.69 /c/	C /b/ B /c/	0.73	C	0.91	E /c,d/
First and Harrison Sts.	1.10 /c/	F /c/	1.12	F	1.27 /c/	F /c/
Second and Howard Sts./b/	0.53	A /f/	0.53	A	0.63 /e/	B /e,f/

/a/ LOS descriptions and relationship to V/C ratios are shown in Table D-3, p. A-52 of Appendix D.
/b/ Based on 1986 traffic counts conducted for the 101 Second St. Office Project EIR (85.414E).
/c/ Mission Bay EIR contains analyses of existing and projected levels of service at the First and Harrison Sts. and the Fourth and Harrison Sts. intersections. (Vol. II, Table VI.E.23, p. VI.E.144.) Depending on which alternative in the Mission Bay Plan is selected, the year 2000 V/C rating at Fourth and Harrison Sts. would be between 0.90 and 0.92. The differences between the existing values for V/C ratios and LOS are due to traffic conditions on days when traffic was counted and to different traffic assumptions used by the traffic consultants.
/d/ The two right lanes on Fourth St. operate at LOS E/F. This condition would continue in the future.
/e/ Not analyzed in the Mission Bay EIR; data from Downtown Plan EIR. The projected V/C ratio is consistent with the expected 20% increase in traffic volumes South of Market.
/f/ Turning movements on and off Howard St. operate at LOS C. This condition would continue in the future.

SOURCE: Environmental Science Associates, Inc.

peak-hour eastbound traffic flow is functionally at capacity, the travel demand from the project would not be expected to increase the flows on the Bay Bridge in the peak-hour; rather, the East Bay-bound auto traffic from the project would most likely compete with and possibly displace existing users of the Bay Bridge into later portions of the peak period. This competition for access would occur at the on-ramps to the Bay Bridge and any displacement of existing users to later time periods would depend on the time of arrival of project vehicles at the on-ramps. Some drivers would shift to carpools or transit as a result of cumulative displacement.

Pedestrian Movements

The project would have a through-block arcade with access to ground-floor retail areas and office elevators from the arcade. The arcade would have primary pedestrian access from Howard St. and would extend through to Natoma St. The project at full occupancy would generate about 230 pedestrian person trip-ends (pte) during the noon 15-minute period, about 160 pedestrian pte during the p.m. peak 15-minute period. Pedestrian travel destinations were estimated on the basis of projected major travel modes. Pedestrian trips were assigned to sidewalks and crosswalks on the basis of these destinations.

Operating conditions on sidewalks and crosswalks have been evaluated in terms of pedestrian flow categories or regimen, which relate the density of pedestrians in a specific time period (pedestrians per foot of clear sidewalk width per minute) to the quality of pedestrian flow (the difficulty of maintaining walking paths and speeds on a sidewalk)./11/ FEIR Appendix C, Table C-2, p. A-27 shows the relationships among flow rates, walking speed, path choice, and interaction among pedestrians for each flow regime. FEIR Appendix C, Figure C-2, pp. A-28 - 29, shows photographs of sidewalk conditions for each flow regime. Typically, an upper limit for desirable conditions is 14 pedestrians per foot per minute (p/f/m), defined as crowded, although conditions as high as 18 p/f/m, a congested condition in which pedestrians are subjected to extreme crowding, have been documented./16/

Table S-3, p. 43, summarizes pedestrian flow conditions on the Howard St. and Natoma St. sidewalks and crosswalks at the intersections of Howard St. with First and Second Sts. These sidewalks and crosswalks currently operate in open, unimpeded and impeded conditions during both the noon-peak 15-minute period and 15-minute p.m. peak period./17/ Conditions on these sidewalks and crosswalks following addition of the project pedestrian travel to the existing (1984) volumes would increase slightly but would still be in the unimpeded and impeded range during both the noon and p.m. peak 15-minute periods. Although some conditions would be in the impeded range, there would continue to be adequate facilities for pedestrians on the sidewalks adjacent to the project.

Sidewalks and crosswalks adjacent to the project would operate in the year 2000 in the unimpeded and impeded range during the noon peak (see Table S-3, p. 43). The project pedestrian traffic would represent about 54% and 59% of the pedestrian volumes on the Howard

TABLE S-3: PEAK PEDESTRIAN VOLUMES AND FLOW REGIMEN (project side of street)

	Total Width (feet)	Effective Width (feet)/a/	Existing		Existing Plus Project		2000		
			Flow p/f/m/b/	Flow Regimen/c/	Flow p/f/m	Project Regimen	p/f/m	Regimen	Percent
NOON PEAK /d/									
Howard St. sidewalk	12.0	9.3	0.2	Open	1.7	Unimpeded	2.6	Impeded	54%
Natoma St. sidewalk	5.0	3.3	0.04	Open	0.8	Unimpeded	1.2	Unimpeded	59%
Crossing Howard St. at Second St.	10.3	10.3	1.0	Unimpeded	1.6	Unimpeded	1.7	Unimpeded	33%
Crossing Second St. at Howard St.	9.2	9.2	1.3	Unimpeded	2.2	Impeded	2.1	Impeded	44%
Crossing Howard St. at First St.	6.7	6.7	1.0	Unimpeded	2.0	Unimpeded	1.5	Unimpeded	66%
Crossing First St. at Howard St.	8.4	8.4	1.0	Unimpeded	1.8	Unimpeded	1.6	Unimpeded	28%
P.M. PEAK/d/									
Howard St. sidewalk	12.0	9.3	0.8	Unimpeded	1.8	Unimpeded	2.9	Impeded	33%
Natoma St. sidewalk	5.0	3.3	0.6	Unimpeded	1.1	Unimpeded	1.7	Unimpeded	30%
Crossing Howard St. at Second St.	10.3	10.3	1.8	Unimpeded	2.2	Impeded	2.9	Impeded	13%
Crossing Second St. at Howard St.	9.2	9.2	2.1	Impeded	2.8	Impeded	3.4	Impeded	19%
Crossing Howard St. at First St.	6.7	6.7	3.2	Impeded	3.9	Impeded	5.1	Impeded	13%
Crossing First St. at Howard St.	8.4	8.4	1.0	Unimpeded	1.6	Unimpeded	1.6	Unimpeded	34%

/a/ The effective width is the narrowest portion of the sidewalk and is calculated by subtracting the space taken by poles, planter boxes, people standing at windows, etc., from the total width.
/b/ Pedestrians per foot of effective sidewalk width per minute.
/c/ See Table C-2 and Figure C-2, Appendix C, for descriptions of pedestrian flow regimens.
/d/ Peak 15-minute periods.

SOURCE: Environmental Science Associates, Inc., and Pushkarev and Zupan

St. and Natoma St. sidewalks, respectively, and from about 28% to 66% of the pedestrian volumes on the crosswalks across Howard St., Second St. and First St. during the noon hour.

P.m. peak-hour operations in the year 2000 would also be in the unimpeded and impeded ranges. Project pedestrian traffic during the p.m. peak hour would represent about 33% and 30% of the pedestrian volumes on the Howard St. and Natoma St. sidewalks, respectively. Between 13% and 34% of the p.m. peak-hour crosswalk pedestrian volumes would be from the project.

OFF-STREET PARKING AND LOADING REQUIREMENTS AND DEMAND

Parking

Parking demand was projected for the 524 Howard St. project on the basis of the estimated vehicle traffic generated by the project. The project would create net new long-term parking demand for about 180 long-term spaces and 15 short-term spaces for a total net new demand of 195 equivalent daily spaces. The project would provide 45 parking spaces (all short-term), and eliminate 100 spaces, resulting in an unmet demand of about 250 equivalent daily spaces (195 + 100 = 295 - 45 = 250 spaces).

The proposed project is in the C-3 District, in which off-street parking is not required for commercial uses. The City Planning Code allows accessory parking up to seven percent of the gross floor area of the project. Parking would be subject to rates that encourage short-term use and discourage all-day parking. Occupancy in public off-street parking lots and garages in the vicinity would be expected to increase from the existing ??% to ??% with demand generated by the proposed project.

Loading

Based upon data published in Center City Circulation Program: Pedestrian Circulation and Goods Movement, the new building would generate about 49 service vehicle stops per day./18/ Average hourly loading space needs are given in terms of spaces per hour per 10,000 gsf of building space; average demand for the project would be about 2.4 spaces per hour and peak hourly demand would be 3.0 spaces.

Under the City Planning Code, the project would be required to provide two loading docks to serve the 220,815 gsf of office space (0.1 spaces per 10,000 gsf = 2.2 spaces for 220,815 gsf of office space). Retail use in the project would not be of sufficient size to require additional loading facilities. (The Code allows the substitution of two service van spaces for each loading space, provided that at least one-half the required number of spaces are provided for trucks.)

Two loading spaces, 35 ft. in length, would be located on the Natoma St. side of the project, served by a curb cut of about 25 ft. The basement parking level would be reached via a one-lane ramp with an additional 15-ft. curb cut, also located on Natoma St. The separation between the curb cuts would be about 25 ft. exceeding the minimum allowable separation of 20 ft. Traffic on the ramp would be controlled by a signal to be installed as part of the project.

The depths and other dimensions and number of docks conform to requirements as specified in Section 154(b) of the City Planning Code. Section 155(d) of the City Planning Code allows up to four freight loading and service vehicle spaces to be accessible directly from a service street or alley such as Natoma St. The project's two loading docks would be in conformance with the Code.

The potential for pedestrian vehicle conflicts would be increased by the service-vehicle traffic from the project crossing the Natoma St. sidewalk. Pedestrian volumes on Natoma St. are low, so the impact of project service-vehicle traffic would not be as great as it would be in a more heavily traveled pedestrian area, such as Howard St.

Analysis of the design of the proposed Natoma St. loading/service area indicates that standard single-unit trucks would be able to enter the loading area by backing in from an eastbound position on Natoma St., as required by Department of Public Works standards.

DEMOLITION, EXCAVATION, AND CONSTRUCTION TRAFFIC

During the entire 19-month construction period, transportation impacts would result from truck movements to and from the site during demolition, excavation, and construction activity. Demolition would require about two months, and would generate an average of ten truck movements per day in and out of the project site, between 9:00 a.m. and 3:30 p.m. Excavation

would require an additional three months and would generate an average of 40 truck movements per day in or out of the project site, between 9:00 a.m. and 3:30 p.m. Trucks would most likely use Howard St. to Fourth St. to the freeway ramp at Fourth and Harrison Sts. to haul debris and excavation material to a disposal site in South San Francisco. Construction activities (steel erection and finishing) would generate an average of 15 and a maximum of 40 truck movements per day during the 13.5-month period.

Construction truck access to the site would be from both Howard and Natoma Sts. During the entire 19-month construction period, approximately 74 ft. of sidewalk fronting the project site on Howard St. and on Natoma St. would be closed. The curb lanes on Natoma and Howard Sts. would be closed to provide a pedestrian detour. Lane and sidewalk closures are subject to Department of Public Works and Muni review.

Materials storage is proposed to be off-site, and would generate construction vehicle trips to the site. Temporary parking demand by construction workers' vehicles, and impacts on local intersections from construction worker traffic, would occur in proportion to the number of construction workers who would use automobiles.

The impact of construction truck traffic would be a lessening of the capacities of access streets and haul routes because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles. Lane blockage on Howard and Second Sts. by queued trucks, if it were to occur, would reduce the capacity of these streets. The following Muni lines could be affected: 12-Folsom, 15-Third, 42-Downtown Loop. Blockage during times of peak traffic flow would have greater potential to create conflicts than during non-peak hours because of the greater peak-hour numbers of vehicles in adjacent lanes and vehicles (autos and buses) that would have to maneuver around the queued trucks. Any truck traffic from 7:00 a.m. to 9:00 a.m. or from 4:00 p.m. to 6:00 p.m. would coincide with peak-hour traffic, and would serve to worsen service levels. As noted above, truck traffic would be restricted to the hours of 9:00 a.m. to 3:30 p.m. which would avoid such peak-period effects.

Additional developments in the immediate project vicinity are under environmental review; 101 Second St. and 222 Second St. are proposed in the project area. Some phases of those developments' construction could overlap with construction of the project. The 101 Second St.

and 222 Second St. developments are closest to the project site. In the event of combined construction periods of the proposed project and one or more of these other projects, construction truck traffic would be expected to increase and traffic congestion and transit delays could increase. Should one project be completed and a second begin soon after, construction truck traffic impacts would be prolonged.

NOTES - Transportation

/1/ San Francisco Department of City Planning, Transportation Guidelines for Environmental Impact Review: Transportation Impacts, September 1983. This document describes the procedure used to calculate travel demand from the project. Trip generation rates of 18.1 person trip-ends (pte) per 1,000 gross sq. ft. of office space and 150 pte per 1,000 gross sq. ft. of retail space were used to generate travel from the project. The two trip generation rates are for independent land uses. When used to generate travel from more than one land use on the same site the rates may overestimate total travel to the site since a portion of the travel from each of the land uses may occur between land uses on the site and not leave the site. Such trips are referred to as "linked trips." The calculations for this project have not been discounted to account for linked trips and thus present a "worst-case" scenario.

/2/ Deduction of existing travel demand is per the Transportation Guidelines.

/3/ The percentage of travel occurring in the peak period and the peak hour are from the Transportation Guidelines. Total travel during each of the periods has been adjusted to show only outbound (leaving the downtown area in the peak commute direction) travel. The outbound travel consists of all of the work-related travel and one-half of the other (non-work) travel.

/4/ San Francisco Department of City Planning, Office of Environmental Review, The Downtown Plan Environmental Impact Report, EE81.3, certified October 18, 1984. This document is an analysis of projected growth in the C-3 Districts to the year 2000 under the Downtown Plan and five alternatives. The transportation analysis in the EIR includes projections of future modal splits for work and other (non-work) travel for the p.m. peak period, peak hour, and daily time periods. [NOTE: REVISE?]

/5/ San Francisco Department of City Planning, January 1983, Transportation, an Element of the Master Plan.

/6/ Caltrans, September 1984, San Francisco Terminal Relocation Study; Caltrans, October 1984, Peninsula Commute Service San Francisco Terminal Relocation Engineering Cost Study.

/7/ I-280 Transfer Concept Program Final Environmental Impact Report (84.385E), certified May 23, 1985. Alternative VA includes the CalTrain extension to an underground station near the Transbay Transit Terminal.

/8/ Metropolitan Transportation Commission, September 28, 1984, Request for Proposal, Peninsula Mass Transit Study / Institutional Analysis.

/9/ Peninsula Corridor Study Joint Powers Board, August 10, 1988, Request for Proposals, Peninsula Commute Service San Francisco Downtown Station Relocation Study Environmental Impact Statement/Environmental Impact Report.

/10/ Robert Halligan, Caltrans Public Affairs Officer, telephone conversation, January 2, 1985. The I-280 Transfer Concept Program EIR also analyzed an alternative involving an underground station under Rincon Annex (Alternative V). This alternative has been precluded by construction of the 201 Spear St. office building.

/11/ This deficit-per-ride figure is based upon information provided in: Touche Ross & Co., Transit Impact Development Fee Cost Study, Fiscal Year 1981-82, July 1983, corrected September 9, 1983, and consultation with Bruce Bernhard, Chief Financial Analyst, San Francisco Municipal Railway, telephone communication, October 11, 1984, and March 20 and May 13, 1985. The calculation of the peak period marginal deficit (additional cost per ride minus additional revenue per ride) was done by ESA.

/12/ According to Muni, the appropriate technique for determining the costs to Muni of cumulative development is an average cost analysis which would include both capital and operating costs. Application of this technique, however, is limited because relevant capital cost data are not available from Muni. Further, capital costs are difficult to allocate on a person-trip basis as capital expenditures occur from time to time in large amounts, not necessarily annually. The established method of allocating capital costs is through depreciation, which is based on historical depreciation costs, not replacement costs. Such an estimate would be low in comparison with the costs of new capital improvements required for a single passenger trip. The use of existing capital cost data would underestimate future capital cost needs. Existing Muni accounting statistics do not enable future capital costs to be calculated on a per passenger trip basis (Bruce Bernhard, Muni Chief Financial Analyst, telephone communication, March 25, 1985).

/13/ This conclusion should be qualified because the Muni deficit-per-passenger-trip figure is based on 1981-82 data, and because the total project-generated deficit is calculated only for those riders who use Muni as their primary mode of transportation, excluding riders who would use a combination of transportation carriers, such as Muni and Caltrain. More recent data that would allow a more precise estimate of costs are not available. The deficit due to the project would be: 178 peak-period trips per day x 252 working days per year x $0.50 deficit = $22,400. The cost deficit estimate is based on the assumption that essentially all vehicles are operating at capacity during peak periods and additional riders would require new vehicle trips. It was assumed that during off-peak periods, all vehicles operate with excess capacity, resulting in an average off-peak marginal cost of zero. These cost estimates are appropriate for project costs to Muni of a single office building. Assessments of costs that would result from cumulative development require the inclusion of additional cost factors and may be best projected using average cost data. Muni does not have data that would enable it to estimate the average cost per passenger trip. It is reasonable to conclude that average costs would be significantly higher than marginal costs.

/14/ Ward Belding, Supervisor, Office of Research, BART, telephone conversation, September 27, 1985. The $1.20 average deficit per trip is based on all operating costs and revenues for the entire system and is not specific to San Francisco trips. Available data from BART do not enable peak and non-peak period costs to be differentiated.

/15/ 860 BART trips per day x 252 days/year x $1.20 = $260,000.

/16/ Pushkarev and Zupan, 1975, Urban Space for Pedestrians, Cambridge, Mass., pp. 85-117.

/17/ Pedestrian counts were made by Environmental Science Associates, Inc. on Monday, September 29, 1986 from 12:00 p.m. to 1:00 p.m. and from 4:30 p.m. to 5:30 p.m.

/18/ San Francisco Department of City Planning, 1980, Center City Circulation and Goods Movement, Working Papers 1, 2 and 3, and Final Report.

F. AIR QUALITY

(The following text replaces the Air Quality Impacts text on FEIR pp. 108-113, to include updated transportation data as part of the air quality analysis, and new information from the Mission Bay EIR and South of Market EIR cumulative analyses. Tables S-4 and S-5 replace FEIR Tables 9 and 10.)

CUMULATIVE CONTEXT

The Downtown Plan EIR analyzed the effects of employment growth in the C-3 District on regional air quality in the future (Downtown Plan EIR, pp. IV.I.1-19). Since that EIR was certified there have been changes in some air quality impact analysis methods and data. The changes are reflected in the Mission Bay and South of Market Plan EIRs. This material is incorporated by reference and summarized here. In general, the differences are new emission factors (these are revised periodically by the Bay Area Air Quality Management District), a new standard for determining possible significant air quality effects, and failure of the Bay Area to attain federal ozone and carbon monoxide standards. Other information in the Downtown Plan EIR remains applicable and is an appropriate basis for analyzing cumulative impacts of downtown growth, of which the proposed project is a part.

Motor vehicle exhaust emissions would be the primary source of air pollutants in the Downtown & Vicinity. These emissions would affect local and regional air quality. Ozone and carbon monoxide concentrations occasionally violate air quality standards at some locations in the Bay Area. Emissions of hydrocarbons and nitrogen dioxide, precursors of ozone, would contribute to regional ozone concentrations. Emissions would also add to local carbon monoxide concentrations at congested intersections in the vicinity.

The Bay Area Air Quality Management District considers projects that produce a net increase in vehicle emissions greater than one percent of countywide transportation emissions to have a potentially significant impact on air quality. By buildout in the year 2020, emissions of carbon monoxide, hydrocarbons, and nitrogen oxides from the Mission Bay project would exceed one percent of countywide transportation emissions under all Alternatives. (For buildout, year 2000 emission factors were used and emissions were compared with countywide transportation emissions projected for 2000, as emission factors and inventories beyond 2000 are not available.)

(For more detail on air pollutant emissions, see Mission Bay EIR, Vol. II, pp. VI.F.12-17.)

Motor vehicles are the major source of carbon monoxide, and concentrations can build up at congested intersections. Computer modeling of carbon monoxide concentrations at eight of the busiest intersections in the Downtown suggests that state and federal standards for eight-hour average concentrations (9 parts per million [ppm]) currently may be violated on occasion at the intersection of Sixth and Brannan Streets (13.4 ppm) and at the intersection of Third and Berry Streets (9.2 ppm). None of the eight intersections currently violate state or federal one-hour standards. Carbon monoxide concentrations are expected to improve throughout the region due primarily to better vehicle emission controls. Carbon monoxide concentrations at the eight intersections, even with Mission Bay and cumulative growth in traffic, are projected to decrease. No violations of state or federal carbon monoxide standards are expected in 2000 or at buildout of Mission Bay in 2020.

(For more detail on intersection carbon monoxide concentrations in the South of Market area, see Mission Bay EIR, Volume II, pp. VI.F.9-10 and 17-18, and Table VI.F.4, p. VI.F.19; South of Market EIR pp. 140-142 and Table 10, p. 143.)

The 1982 Bay Area Air Quality Management Plan established schedules and strategies to comply with federal ozone and carbon monoxide standards established under the Clean Air Act by December 31, 1987. The deadline has now passed, and the Bay Area remains a non-attainment area for ozone and carbon monoxide (standards are occasionally violated). Congress is considering additional amendments to the Clean Air Act to address those areas of the country that remain in non-attainment, and a new regional plan may be required. All Alternatives in the Mission Bay EIR would be consistent with 1982 Plan strategies to reduce

motor vehicle trips by encouraging development in urban service areas, mixed-use and infill development, and rehabilitation and reuse of existing buildings. All Alternatives considered in the Mission Bay EIR represent more intensive use of the Project Area than assumed under the 1982 Plan, so Mission Bay would be inconsistent with the Plan's land use and population projections. The South of Market growth would not conflict with the 1982 Plan. (See Mission Bay EIR Volume II, pp. VI.F.19-20; South of Market EIR, pp. 137, 139, and 142-144.)

As noted in the Downtown Plan EIR, emissions associated with C-3 District development are not expected to increase ozone concentrations and thus would not conflict with the 1982 Plan objectives. (See Downtown Plan EIR, p. IV.I.11.) Downtown development, including Mission Bay, is not expected to conflict with 1982 Plan objectives regarding carbon monoxide. This is based on data collected since the Downtown Plan EIR was completed (see, e.g., 600 California Street Final EIR, pp. 128-129), and on the more recent air quality analysis in the Mission Bay EIR.

PROJECT EFFECTS

Upon completion, the project would affect air quality in two ways. Emissions would be generated by project-related traffic, and by combustion of natural gas for building space and water heating. Transportation sources would account for over 95% of project-related emissions.

Curbside CO concentrations at selected intersections that would be affected by project-generated traffic and by cumulative development traffic were projected for conservative conditions, and are compared with ambient standards in Table S-4, below. In 2000, the average vehicle is expected to emit less carbon monoxide (CO) than in 1985 due to ongoing state and federal emissions controls.

Currently (1985), the eight-hour CO concentration at the Fourth and Harrison intersection is estimated to equal the 9.0 ppm standard (which is not a violation). CO concentrations are predicted to be less in 2000 than in 1984 and would not violate the standards at this intersection in this future scenario.

TABLE S-4: EXISTING AND PROJECTED CURBSIDE CARBON MONOXIDE CONCENTRATIONS AT SELECTED INTERSECTIONS

Intersection	Averaging Time	Concentrations (ppm)/a/ 1985	Concentrations (ppm)/a/ Mission Bay EIR 2000/b/
Fourth and Harrison/c/	1-hour	12.9	9.0
	8-hour	9.0	6.3
First and Harrison	1-hour	11.6	5.6
	8-hour	8.1	7.9

/a/ Calculations for all scenarios were made using a revised version of the Modified Linear Rollback (MLR) method described in the Plan EIR. Background concentrations were calculated to be 7.1 ppm for eight hours in 1985, and 5.0 ppm for eight hours in 2000. Underlined values are in violation of the state or federal CO standards. The one-hour state standard is 20 ppm, the one-hour federal standard is 35 ppm, and the eight hour state and federal standards are 9 ppm. Emission rates were derived from the California Air Resources Board EMFAC7D computer model, from the BAAQMD's Guidelines, revised April 1988.
/b/ Based on the growth forecast methodology contained in the Mission Bay EIR. The project would be contained within this forecast.
/c/ South of Market EIR, Table 10, p. 143.

SOURCE: Environmental Science Associates, Inc.

Table S-5 shows projected daily emissions of pollutants in the year 2000 from project-generated traffic, projected daily emissions in 2000 in Downtown & Vicinity development projected by the Mission Bay EIR, and total emissions projected for the entire Bay Area by the Bay Area Air Quality Management District (BAAQMD). The project would contribute about one percent to the total emissions generated by Downtown & Vicinity development, in 2000.

Emissions of particulates resulting from construction and from vehicle trips generated by the project and cumulative development would increase particulate concentrations, which could increase the frequency of particulate standard violations in San Francisco, with concomitant health effects and reduced visibility./1/

TABLE S-5: PROJECTED DAILY POLLUTANT EMISSIONS

Pollutant	Emissions (tons per day)/a/ Project 2000/b/	Mission Bay EIR 2000/c/	Bay Area 2000/d/
Hydrocarbons	0.07554	0.17	560
Nitrogen Oxides	0.0635	0.29	492
Carbon Monoxide	1.799	5.6	2,170
PM-10	0.0133	0.27	764
Sulfur Oxides/e/	0.0105	0.05	225

/a/ Project and Mission Bay EIR emissions were calculated using BAAQMD EMFAC7D vehicle emission factors. Emissions of HC, NOx, and CO include an assumed six minutes of idling time per vehicle trip. Emissions of particulates include dust disturbed from roadway surfaces.
/b/ Based upon a weighted daily average of 6,848 miles traveled.
/c/ Mission Bay EIR, Vol. II, Table IV.1.2, p. IV.I.12.
/d/ Air Quality and Urban Development: Guidelines for Assessing Impacts of Projects and Plans, Revised April 1988, the Bay Area Air Quality Management District.
/e/ Sulfur oxides and sulfur dioxides are assumed to be interchangeable.

SOURCE: Environmental Science Associates, Inc.; EIP Associates.

NOTE - Air Quality

/1/ State standards for particulate matter changed in 1983 and federal standards changed in 1987 to concentrate on fine particulate matter which has been demonstrated to have health implications when inhaled (PM-10). Only those particulates 10 microns or less in size are measured under the PM-10 standard. The BAAQMD (Thomas Perardi) has stated that TSP includes about 50-60% of particulates of 10 microns or less; thus, the TSP standards are generally equivalent to the PM-10 standards. BAAQMD is presently monitoring PM-10 at seven Bay Area monitoring stations, including the 16th and Arkansas station in San Francisco. Data from the San Francisco station from April 1986 to September 1986 are available. Once 12 months of data are available it will be possible to assess whether specific violations of the PM-10 standard have occurred and to predict with greater accuracy whether there will be future violations.

F. CONSTRUCTION NOISE

The following two paragraphs are added to FEIR p. 123, after the first partial paragraph:

> The U.S. Environmental Protection Agency (EPA) has determined that noise levels of 70 dBA, L_{eq} over a 24-hour day, assuming a 40-year exposure period, are the maximum level at which conservation of hearing is ensured for virtually all of the population./7,8/ On

an equal energy basis, assuming that pile driving would occur for no more than eight hours per day over a period of less than three months, the maximum noise level would be six dBA greater than the maximum noise levels expected during pile driving at land uses adjacent to the project site, with windows closed. No criteria have been established for non-auditory, physcological effects, such as elevated blood pressure due to exposure to high noise levels. However, studies suggest that such effects can occur at noise levels below criteria thresholds for permanent hearing loss./9/ Thus, while occupants of buildings adjacent to the project site would not have hearing loss, they may experience non-auditory physcological effects.

Noise generated during piledriving could be reduced by erecting barriers around the project site. Barriers may include such items as berms, walls, etc., that would affect sound propagation by interrupting it and creating and "acoustic shadow zone." The more solid, high and wide a nosie barrier were, ther more effectively lit would attenuate noise. A wall may provide maximum noise reductions up to 20 dBA, while a berm may reduce noise levels a maximum of 23 dBA./10/

The following four footnotes are added after footnote 161, FEIR p. 124:

/7/ U.S. Environmental Protection Agency, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974.

/8/ L_{eq} is the equivalent steady-state would level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period.

/9/ U.S. Environmental Protection Agency, Noise Effects Handbook, July 1981.

/10/ U.S. Department of Transporatation, Federal Highway Administration, Highway Noise, December 1978.

The first full paragraph, FEIR p. 123, is revised to reflect current development proposals in the project vicinity; revised language is underlined:

Two additional projects, 222 Second St. (at Howard) and 201 Second St. (at Mission), are planned in the project area. Should these projects' construction schedules coincide with that of the proposed project, noise levels would be expected to increase by two to five dBA. This would generally be audible (depending on the loudness of the activity) and would probably be annoying, since noise from construction of one project would be annoying to the nearest receptors (those within 100 ft.). Should one project be completed and a second begin soon after, noise impacts would be prolonged.

(The 535 Mission St. project has been withdrawn; the 100 First St. project has been completed.)

G. SEISMICITY

The Downtown Plan EIR include information on Seismic Safety issues in the C-3 District of downtown. That information remains current. The South of Market Plan EIR provides similar information for that area, as does the Mission Bay EIR for its project area. These EIRs do not provide any new data about seismic issues that establish a need for revisions in the Downtown Plan EIR information or conclusions.

In summary, the Downtown & Vicinity, like other parts of San Francisco and the Bay Area, is subject to potentially large earthquakes from the San Andreas and Hayward faults. Relatively more of the land in Downtown & Vicinity is subject to violent groundshaking intensity than the rest of the City because the eastern edge of the area, including nearly all of Mission Bay, is built on filled land. Employment growth such as that expected in the proposed new building, would result in larger numbers of persons being exposed in the future to earthquake hazards if an event occurred during the workday. New buildings are subject to more stringent building and structural standards than are older buildings. Therefore, persons working (or residing) in buildings such as the proposed project would be relatively safer than those in some older existing buildings. However, glass, and in some cases, building cladding, is expected to endanger those on the streets and sidewalks. The bridges leading to/from San Francisco are expected to be closed for over three days due to damaged access ramps. The same would be true of the freeways heading south to the Peninsula. Muni and Caltrain would be out of service for some time, and power outages would occur for at least one or two days. (See Downtown Plan EIR pp. IV.K.1-17a; Mission Bay EIR, Vol. II, pp. VI.K.11-15 and 33-43; South of Market EIR, pp. 154-174.)

H. POPULATION AND EMPLOYMENT

The following text replaces the Employment and Housing Impacts discussion, FEIR pp. 124-135.

CITY AND REGIONAL POPULATION AND EMPLOYMENT

Housing Demand and Population Growth

The Mission Bay and South of Market Plan EIRs discuss residence patterns in a City-wide and regional context, in relation to housing demand from growth of employment in the Greater Downtown and Mission Bay. San Francisco employment growth will contribute to housing demand throughout the region, as not all San Francisco workers will live in the City. If housing is built in the Mission Bay and South of Market areas, more City workers could live in the City; San Francisco would contribute less to the regional housing market.

Regardless of the type of development in Mission Bay and in South of Market, the importance of San Francisco employment as a factor affecting regional housing demand will decline over time because more housing will be added in the City relative to job growth, compared to the situation in the past. As housing and the labor force continue to grow more rapidly outside San Francisco, people working in San Francisco will represent the same or a smaller percentage of the employed people living elsewhere in the region. San Francisco workers will require about the same share of the region's housing in the future as they did in the early 1980's. San Francisco's effects on the regional housing market will vary in the future. City workers could become more important to the housing market in some close-in communities in western parts of the East Bay and east of the hills along BART corridors, in northern San Mateo County and parts of Marin.

About half of the people working in Greater Downtown San Francisco would live in the City in 2000 and 2020. The rest would live in communities throughout the rest of the region: about 30% in the East Bay, 13% in the Peninsula and in the South Bay and about 8% in the North Bay. Greater Downtown workers living in the City would represent about 57% of the City's employed residents. People working downtown would represent a considerably smaller proportion (about 4-9%) of the employed residents of other Bay Area communities. (See Mission Bay EIR, Vol. II, pp. VI.C.56-61 and 92-97; South of Market EIR pp. 66-67.)

Employment Growth

Employment patterns in the City and the region in the future, particularly in the Greater Downtown, depend somewhat on the development plan chosen and built in the Mission Bay

area. The amount of employment growth forecast in the Bay Region would not change, but the location of jobs would be different. South of Market area employment growth is forecast to be relatively small compared to the rest of downtown and would have little influence on growth patterns. This information, from the Mission Bay and South of Market Plan EIRs, is summarized below.

Mission Bay Alternative A, with a combination of residential and commercial uses, would provide about 25,000 job opportunities. Citywide employment, including South of Market and the rest of the City, would grow by about 210,000 jobs between 1985 and 2020 under this scenario. Mission Bay Alternative B includes predominantly residential and open space uses and would provide about 6,000 jobs; citywide employment would grow by about 200,000 jobs and more of this growth would occur in the downtown and in the rest of the City between 1985 and 2020. Mission Bay Alternative N, with predominantly commercial and industrial development and no new housing, would contribute to citywide employment growth of about 207,000 jobs during the same time frame. The South of Market area would contribute about 24,000 jobs to these totals.

The C-3 District would contribute different amounts to the Citywide employment totals, depending on Mission Bay development at buildout (2020about 360,800 jobs if Mission Bay Alternative A were the buildout scenario; about 362,200 jobs if Alternative B were the Mission Bay development picture; and about 362,200 jobs if the Mission Bay area were developed under present zoning as in Alternative N.

Forecasts of employment in the year 2000 in the Downtown & Vicinity and in the City as a whole have been revised since the Downtown Plan EIR was prepared. The Mission Bay and South of market Plan EIRs provide these updated forecasts. In summary, the C-3 District employment growth would be about 69,000 jobs between 1985 and 2000, compared to a forecast of about 91,000 new jobs between 1984 and 2000 shown in the Downtown Plan EIR. However, it is more appropriate to compare forecast of change from 1981 to 2000, as 1981 base data are the same for both the Downtown Plan EIR and the two more recent EIRs. For that period, the Downtown Plan EIR shows growth of about 106,000 jobs in the C-3 District, while the new forecasts show growth of about 64,000 jobs. (See Mission Bay EIR, Vol. II, pp. VI.B.53-79, and Vol. III, p. XIV.B.24-26; South of Market EIR, Appendix B, pp. B.10 to B.14; and Downtown Plan EIR pp. IV.C.29-61.)

Employment Densities

Employment densities -- the average number of square feet per person in a building -- were recalculated based on the revised space and employment forecasts for the larger area in the Downtown & Vicinity prepared for the Mission Bay EIR. The relative reduction in growth compared to the Downtown Plan EIR forecasts results in a reduction in density, or an increase in the average square feet per person in office uses from 268 sq. ft. to about 294 sq. ft. in the year 2000. (See especially, Mission Bay EIR Vol. II, pp. VI.B.53-56 and VI.B.60-62.)

Use of this density for analysis of individual office projects would reduce the number of persons in that building compared to that shown by use of the Downtown Plan EIR density factor, reducing proportionally that building's contribution to those cumulative impacts caused by employment growth in downtown. The project-related employment was not recalculated because the difference in any one building is relatively small (10-12% less employment), because the difference is nearly unmeasurable in relation to cumulative impacts, and because use of the smaller square footage (higher density) therefore provides a more conservative estimate of the project's impacts.

PROJECT EMPLOYMENT

Removal of the 100-space parking lot and garage would result in the displacement of one employee. Demolition of the existing building for construction of the new project would not result in the displacement from this site of other businesses or employees.

At full operation, the project would accommodate about 870 workers on the site, consisting of about 820 office workers, 30 retail workers, and 20 building maintenance/security workers./1/ The additional space represented by the project would accommodate about 870 additional employees in the C-3 District, representing about 0.25% or less of the C-3 total employment in 2000 and 2020. The impact would be about 0.6% of citywide growth between 1985 and 2000.

The project would accommodate growth of office and retail employment in the C-3 District. It is expected that office businesses providing management, technical, and professional services would occupy the project office space. Over time, the project is expected to be characteristic of all C-3 District office buildings occupied by a mix of corporate and business service firms.

Therefore, average overall density factors for the C-3 District (gross sq. ft. of space per employee) are used to estimate the employment characteristics of the project, as opposed to using any particular tenants which may or may not remain in the he building over the long term.

About 1,890 additional jobs in the Bay Area would result from the employment multiplier effect of project operation./2/ Construction of the new project would require about 225 person-years of construction labor. Construction labor for the project would represent about 0.2% of the total person years of construction labor forecast for the C-3 District from 1984 through 2000. About 400 additional person-years of employment would be generated in the Bay Area, as a result of the multiplier effect of project construction./2/

NOTES - Population and Employment

/1/ is calculated from the estimates of gross sq. ft. of building space from project description. Based on C-3 District employment density factors from the San Francisco Department of City Planning, Downtown Plan EIR, EE81.3, certified October 18, 1984 (268 sq. ft. per office employee, incorporating an average five percent maintenance/security/parking employee).

/2/ Indirect employment projections are based on A 1980 Hybrid Input-Output Model for the San Francisco Bay Region, Association of Bay Area Governments, April 1984. A multiplier of 2.25 was used for office jobs, 0.71 for retail jobs and 1.33 for maintenance jobs. The multipliers used are averages of the Type I and Type II employment multipliers contained in this model.

J. GROWTH INDUCEMENT

The following paragraph replaces the last paragraph, FEIR p. 137:

> The project would be built in a developed urban area, and no expansion to the municipal infrastructure not already under construction would be required to accommodate new development and increased employment due to, or induced by, the project.

VI. MITIGATION MEASURES PROPOSED TO MINIMIZE POTENTIAL ADVERSE IMPACTS OF THE PROJECT

CULTURAL RESOURCES

The following mitigation measure replaces the Cultural Resources measures on FEIR p. 146, to provide the most current approach to such mitigation:

MEASURES PROPOSED AS PART OF THE PROJECT

- The sponsor would retain the services of an archaeologist. The Environmental Review Officer (ERO) in consultation with the President of the Landmarks Preservation Advisory Board (LPAB) and the archaeologist would determine whether the archaeologist should instruct all excavation and foundation crews on the project site of the potential for discovery of cultural and historic artifacts, and the procedures to be followed if such artifacts are uncovered.

  Given the possibility of encountering the remains of cultural or historic artifacts within the project site, prior to the commencement of foundation excavations the project sponsor would undertake a program of archaeological testing. This would consist of observation and monitoring by a qualified historical archaeologist of site clearance of at least any materials below existing grade level, and either the placement of a series of mechanical, exploratory borings or of other similar on-site testing methods. The archaeologist would supervise the testing at the site to determine the probability of finding cultural and historical remains. At the completion of the archaeological testing program, the archaeologist would submit a written report to the ERO, with a copy to the project sponsor, which describes the findings, assesses their significance and proposes appropriate recommendations for any additional procedures necessary for the mitigation of adverse impacts to cultural resources determined to be significant.

  An historical archaeologist would be present during site excavation and would record observations in a permanent log. The ERO would also require cooperation of the project

sponsor in assisting such further investigations on site as may be appropriate prior to or during project excavation, even if this results in a delay in excavation activities.

In addition, a program of on-site construction monitoring by a qualified historical archaeologist, designed to allow for the recovery of a representative sample of the cultural materials existing on the site, would be implemented by the project sponsor. This monitoring and recovery program would result in a written report to be submitted to the ERO, with a copy to the project sponsor.

Should cultural or historic artifacts be found following commencement of excavation activities, the archaeologist would assess the significant of the find, and immediately report to the ERO and the President of the LPAB. Upon receiving the advice of the consultants and the LPAB, the ERO would recommend specific mitigation measures, if necessary. Excavation or construction activities following the preconstruction archaeological testing program which might damage the discovered cultural resources would be suspended for a maximum of four weeks (cumulatively for all instances that the ERO has required a delay in excavation or construction) to permit inspection, recommendation and retrieval, if appropriate.

Following site clearance, an appropriate security program would be implemented to prevent looting. Any discovered cultural artifacts assessed as significant by the archaeologist upon concurrence by the ERO and the President of the LPAB would be placed in a repository designated for such materials. Copies of the reports prepared according to these mitigation measures would be sent to the California Archaeological Site Survey Office at Sonoma State University.

TRANSPORTATION

The following measure replaces the first Transportation Mitigation Measure, FEIR p. 139:

- The project sponsor would contribute funds for maintaining and augmenting transportation services in an amount proportionate to the demand created by the project, as provided by the Board of Supervisors Ordinance Number 224-81.

The first mitigation measure, FEIR p. 140, is revised to permit construction truck movements until 3:30 p.m., rather than 4:00 p.m.:

- During the construction period, construction truck movement would be permitted only between 9:00 a.m. and 3:30 p.m. to minimize peak-hour traffic conflicts and to accommodate queueing of Muni buses prior to the peak hours. The project sponsor and construction contractor would meet the Traffic Engineering Division of the Bureau of Engineering of the Department of Public Works, the Fire Department, Muni and th Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects.

The following measure replaces the second paragraph, FEIR p. 142, to include discussion of Mission Bay EIR cumulative mitigation measures. New or revised language is underlined:

- The City could act to implement the transportation mitigations described in Vol. 1, Section V.E., Mitigation, pp. V.E.4-28, in the Downtown Plan EIR; and in the Mission Bay EIR Vol. II, Section VI.E, Mitigation, pp. VI.E.214-VI.E.217 for the year 2000 and VI.E.224-VI.E.231 for 2020, and in the South of Market EIR, pp. 189-194. The measures for the year 2000 are similar or identical to those in the Downtown Plan and include, in summary: measures to construct and maintain rail rapid transit lines from downtown San Francisco to suburban corridors and major non-downtown centers in San Francisco; measures to fund Vehicle Acquisition Plans for San Francisco and regional transit agencies to expand existing non-rail transit service; provide exclusive transit lanes on City streets and on freeways; reduce incentives to drive by reducing automobile capacities or bridges and highways in certain circumstances and by discouraging long-term parking; measures to encourage carpools, vanpools, and bicycle use; and measures to improve pedestrian circulation within downtown San Francisco.

  Many of the measures have been implemented since the Downtown Plan EIR was certified, such as BART's Oakland WYE track, expansion of the Sutter/Stockton parking garage, requiring transportation brokers in major new downtown buildings, and designation of Rincon Hill as a high density housing area near downtown in the Rincon Hill Plan. Others are under study and a few have changed. Studies are continuing of extending CalTrain downtown, extending BART in the East Bay, building a new Muni Metro turnaround at the foot of Market Street (a DEIS was published by UMTA in summer 1988), and constructing HOV lanes on I-80 near the Bay Bridge; changed measures include the voter disapproval of removing the Embarcadero Freeway. The majority of these measures are relevant on an area-wide, city-wide or regional basis.

  The South of Market EIR includes additional measures related to South of Market such as providing transportation brokerage services for new South of Market projects, as well as relevant measures for cumulative impacts similar to those in the Downtown Plan EIR.

  Three types of mitigation measures related to cumulative impacts are described in the Mission Bay EIR: transportation system capacity improvements which are reasonably sure to happen by 2000 and are assumed in the impacts analysis; measures to mitigate regional impacts by 2000; and measures to mitigate regional impacts by 2020. (See Mission Bay EIR, Vol. II, pp. VI.E.198-231.)

Measures are proposed in the Mission Bay EIR to mitigate the impacts of regional growth in 2020. Those measures include expanding transbay transportation capacity to the East Bay by constructing a new bridge between Alameda and San Mateo Counties, widening the San Francisco-Oakland Bay Bridge or Hayward-San Mateo Bridge, or providing a new transbay tunnel or an enhanced train-control computer system for BART, expanded transbay capacity to the North Bay through provision of bus lanes or light-rail service on a second deck of the Golden Gate Bridge, and expanded transit opportunities to the South Bay via a CalTrain extension to downtown San Francisco or BART and Muni extensions to the Peninsula.

Some of the implementing actions would require approval by decision-makers outside the City and County of San Francisco; many of the measures would require action by City agencies other than the City Planning Commission, such as the San Francisco Public Utilities Commission and/or Board of Supervisors. All except such things as providing transportation brokers would require funding from or approval by MTC. These measures are system-wide measures that must be implemented by public agencies. Other than project-specific measures such as the relevant transportation mitigation measures described above as part of the project or such measures as the Transit Impact Development Fee assessment required by San Francisco ordinance 224-81 which contribute indirectly to implementation of these system-wide measures, it is not appropriate to impose mitigation at system-wide levels on individual projects.

The following is added to Construction mitigation measures, FEIR p. 144, after the second paragraph:

- The construction contract would require that the project contractor muffle and shield intakes and exhausts, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible, so that noise would not exceed limits stated in the City's Noise ordinance (Article 29, San Francisco Administrative Code, 1972).

The following are added to Construction mitigation measures, FEIR p. 145, after the first partial paragraph:

- The final soils report would also recommend whether or not watering of piles of adjacent structures was necessary. If it were found to be necessary, the project sponsor would ensure that the general contractor complied.

- If dewatering is undertaken for the project, the groundwater level in the site vicinity should be monitored. If lowering of the groundwater table were to threaten wooden pile foundations, groundwater recharge would be used to stabilize the groundwater level.

The references to TSP (total suspended particulates) in the first full paragraph, FEIR p. 145, are changed to particulates:

- The project sponsor would require the contractor to sprinkle demolition sites with water continuously during demolition activity; sprinkle unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other such

material; cover trucks hauling debris, soil sand, or other such material; and sweep streets surrounding demolition and construction sites at least once per day to reduce particulate emissions. The project sponsor would require the project contractor to maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants, by such means as prohibition on idling motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs (to reduce emissions for equipment that would be in frequent use for much of a construction period.

VII. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

This chapter is subject to final determination by the City Planning Commission as part of its certification process for the EIR. Chapter VI of the Final Supplemental EIR will be revised, if necessary, to reflect the findings of the Commission.

This chapter identifies significant impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the project, as described in FEIR Chapter V., Mitigation Measures, p. 138 to p. 146, and pp. 60-64 of this document.

No project-specific significant impacts have been identified.

Cumulative development in downtown San Francisco would have a significant effect on the environment in that it would generate cumulative traffic increases as well as cumulative passenger loadings on Muni, BART and other regional transit carriers. These cumulative transportation impacts could cause violations to particulate standards in San Francisco with concomitant health effects and reduced visibility. The proposed project would contribute to these cumulative effects.

VIII. ALTERNATIVES TO THE PROPOSED PROJECT

The following new Alternative F, Indoor Park Alternative, now the project sponsor's preferred alternative, is added to the FEIR, beginning on FEIR p.153j; Figures 27-32, of this document, are added to the FEIR:

F. INDOOR PARK ALTERNATIVE

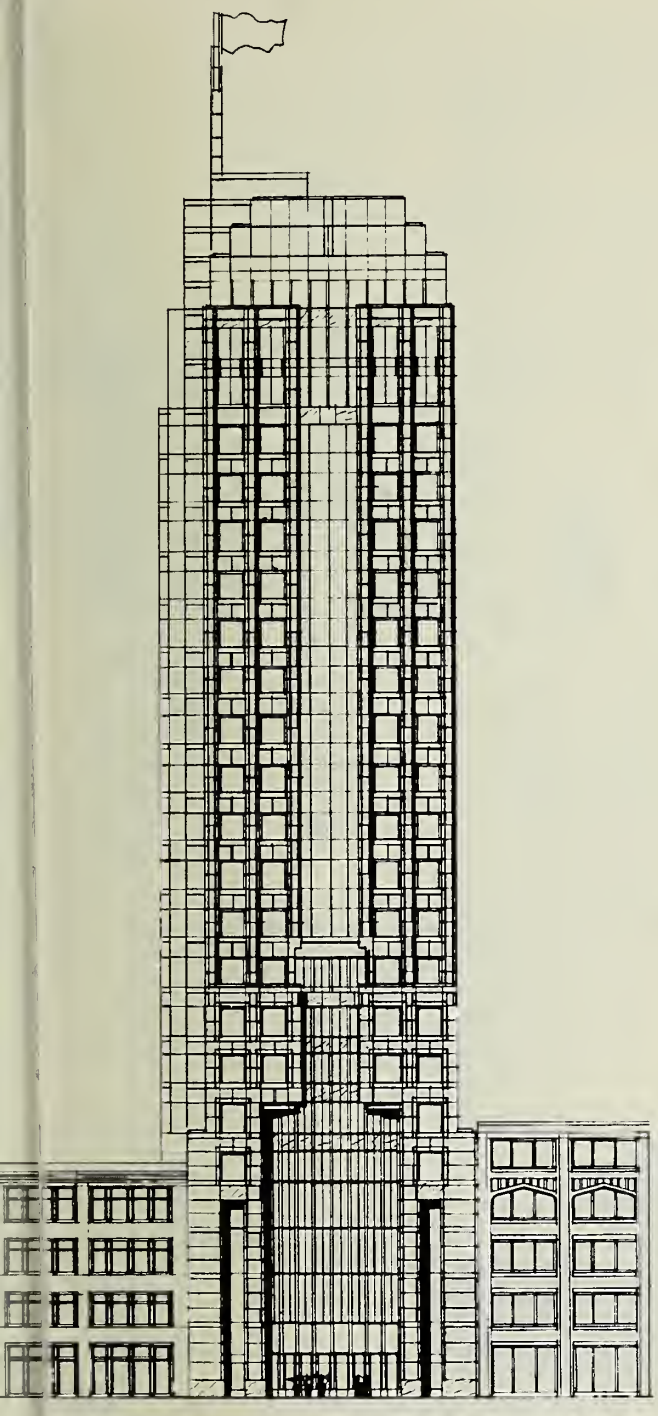
This alternative would include 199,965 sq. ft. of office space; 960 sq. ft. of retail space on the ground-floor and 1,680 sq. ft. on a mezzanine level; about 4,000 sq. ft. of indoor park space on the ground floor (3, 830 sq. ft. would be required); and 100 parking spaces in two basement levels. This would be compared to 220,815 sq. ft. of office, 9,200 sq. ft. of retail, and 5,000 sq. ft. of rooftop open space and 45 parking spaces for the proposed project.

This alternative would include 126, 363 sq. ft. of TDRs, compared to 147,213 sq. ft. with the project. The office area would be 20,850 sq. ft. less than with the project; the FAR would be about 16.3:1, compared to 18:1 for the project. Art provided in this alternative would be similar to that provided for the project. Fifty-five more parking spaces would be provided (on two basement levels) than would be included in the project. This alternative would accommodate a future extension of the Caltrain, and construction of a terminal under the site. If the extension were to occur, parking uses would be eliminated to make way for the terminal.

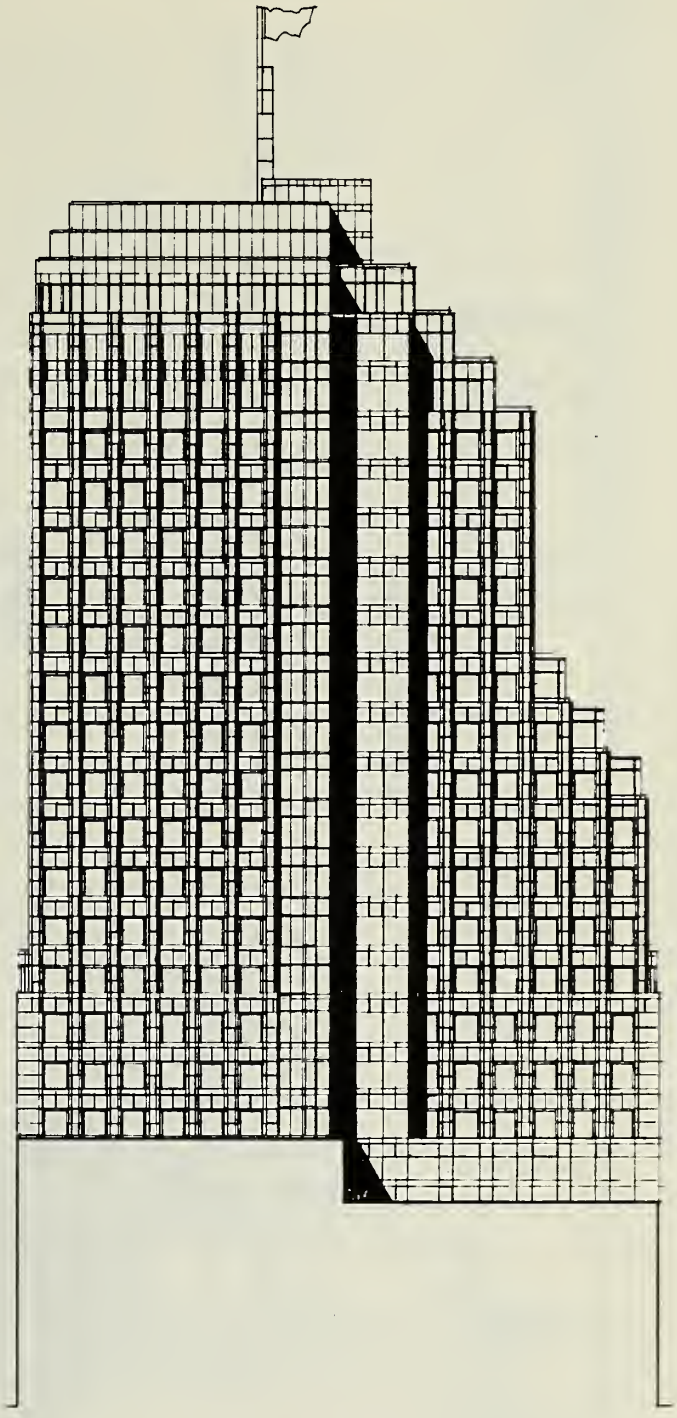
The height would be about 310 ft., compared with 333 ft. for the project, and with length and diagonal dimensions the same as for the project (see Figure 27). This alternative would have setbacks from the north property line, in a stepped profile (see Figure 27). The steps would begin at the 13th and 21st floors. The setbacks would be such that the project would not shade the 100 First St. sun terrace north of the project site after 10:00 a.m. in March and 11:00 a.m. in September, compared to shadows cast by the proposed project on about 15% of the terrace. The alternative would not shade the Transbay Terminal staging area at 1 p.m. in December, compared to about one-third of that area with the proposed project. Other shadow effects would be similar to those of the proposed project. (See Figures 28-31, pp. 68-72) Wind effects would be similar to those of the project.

Because this alternative would require deeper excavation for two basement levels, compared to one level for the proposed project, there could be a greater possibility that deeply buried prehistoric sites may be encountered.

This alternative would generate about ten percent fewer automobile and transit trips than the project. The equivalent daily parking demand would be for about 175 spaces, compared to 195 with the project. Because 100 spaces would be provided, the unmet demand with this alternative would be for 75 spaces, compared to about 150 with the project. If the Caltrain terminal were to be constructed, none of the parking demand from this alternative would be met. The loading demand from this alternative would average 2.2 spaces per hour, compared to 2.4 from the project.



Howard Street Elevation



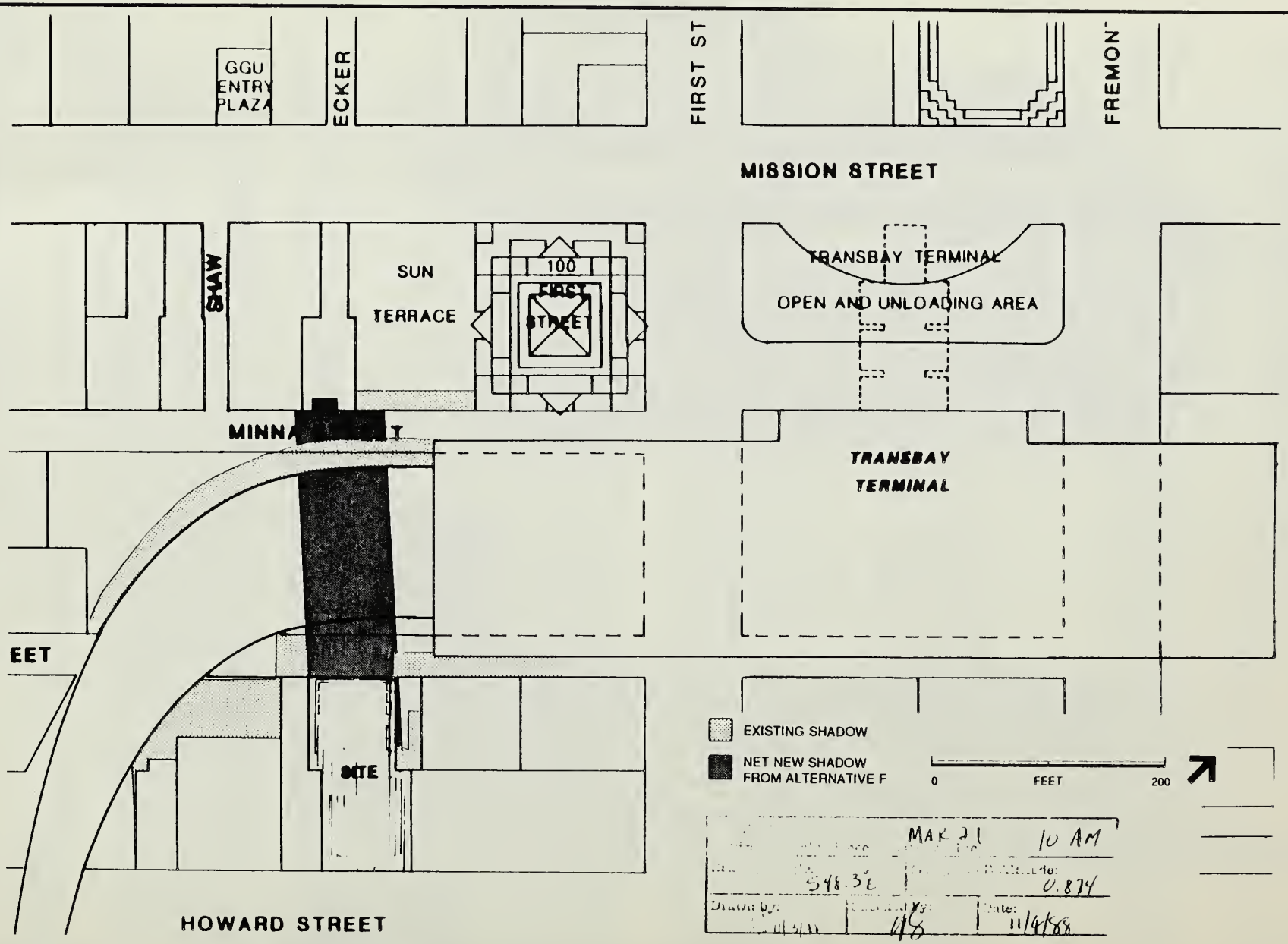
East Elevation

0 FEET 50

524 Howard Street

FIGURE 27
INDOOR PARK ALTERNATIVE ELEVATIONS

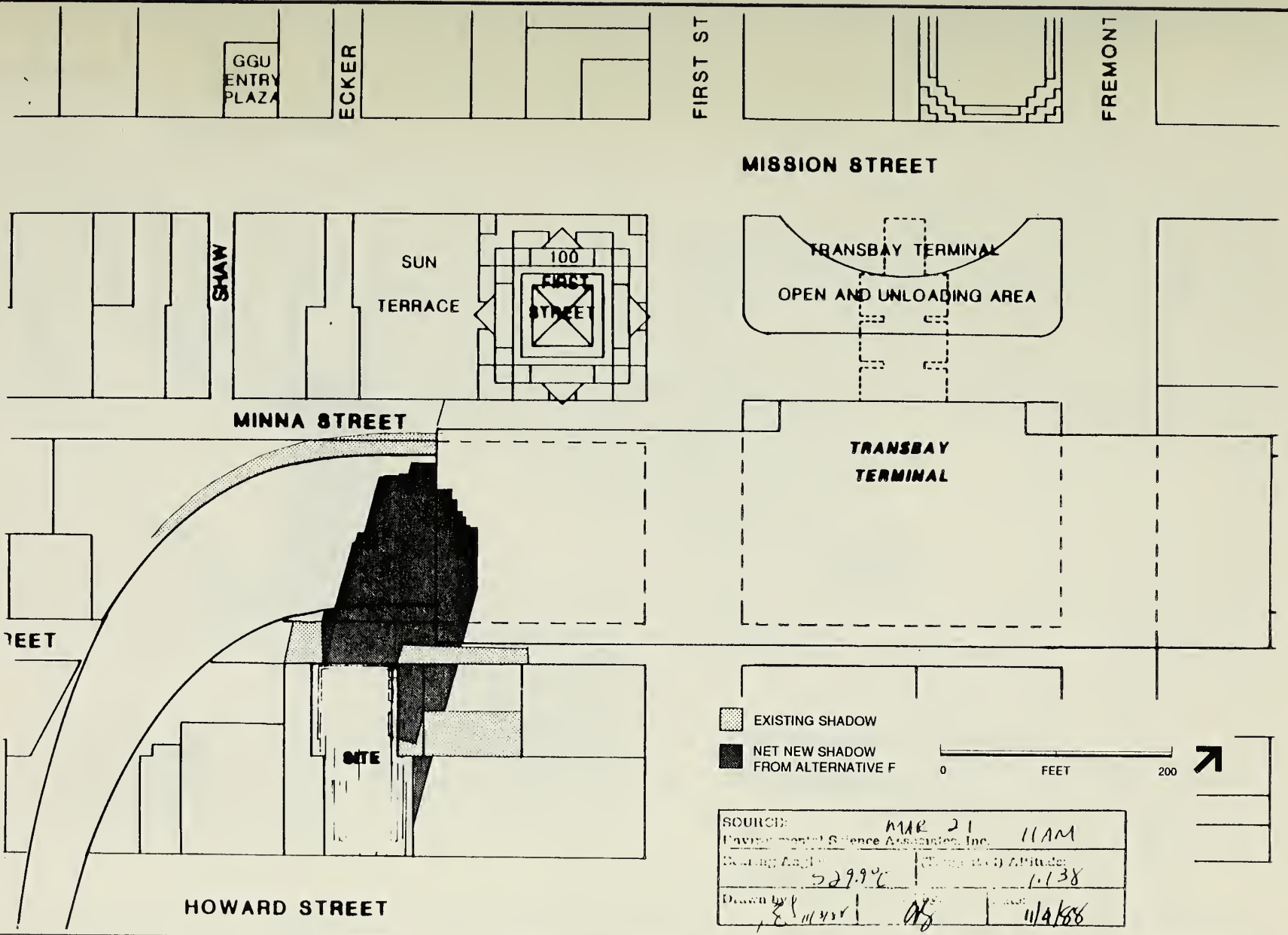
SOURCE: Heller & Leake, Architects



524 Howard Street

FIGURE 28
ALTERNATIVE F SHADOW PATTERNS – MARCH 21, 10 A.M.

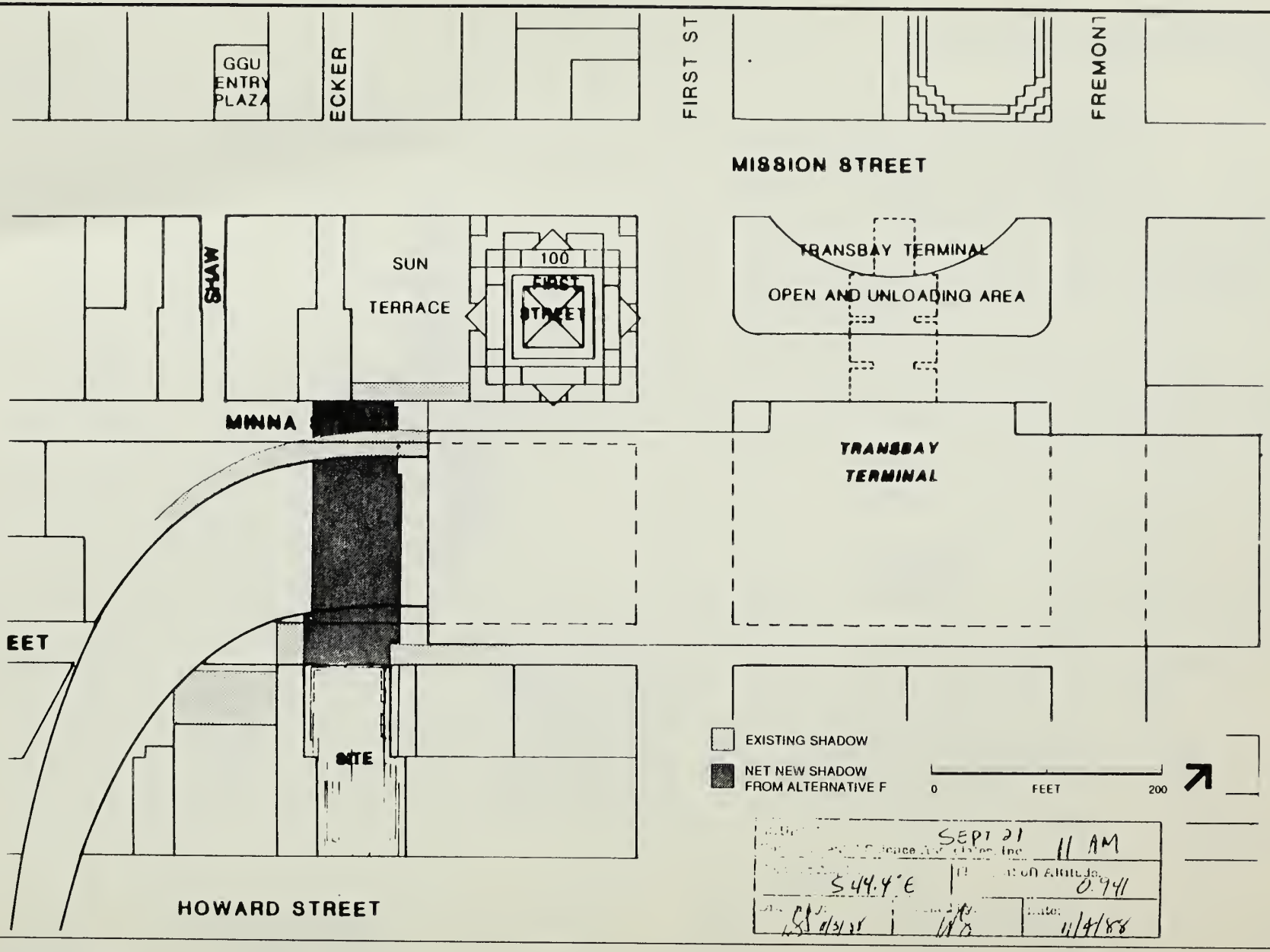
SOURCE: Environmental Science Associates, Inc.



524 Howard Street

FIGURE 29
ALTERNATIVE F SHADOW PATTERNS – MARCH 21, 11 A.M.

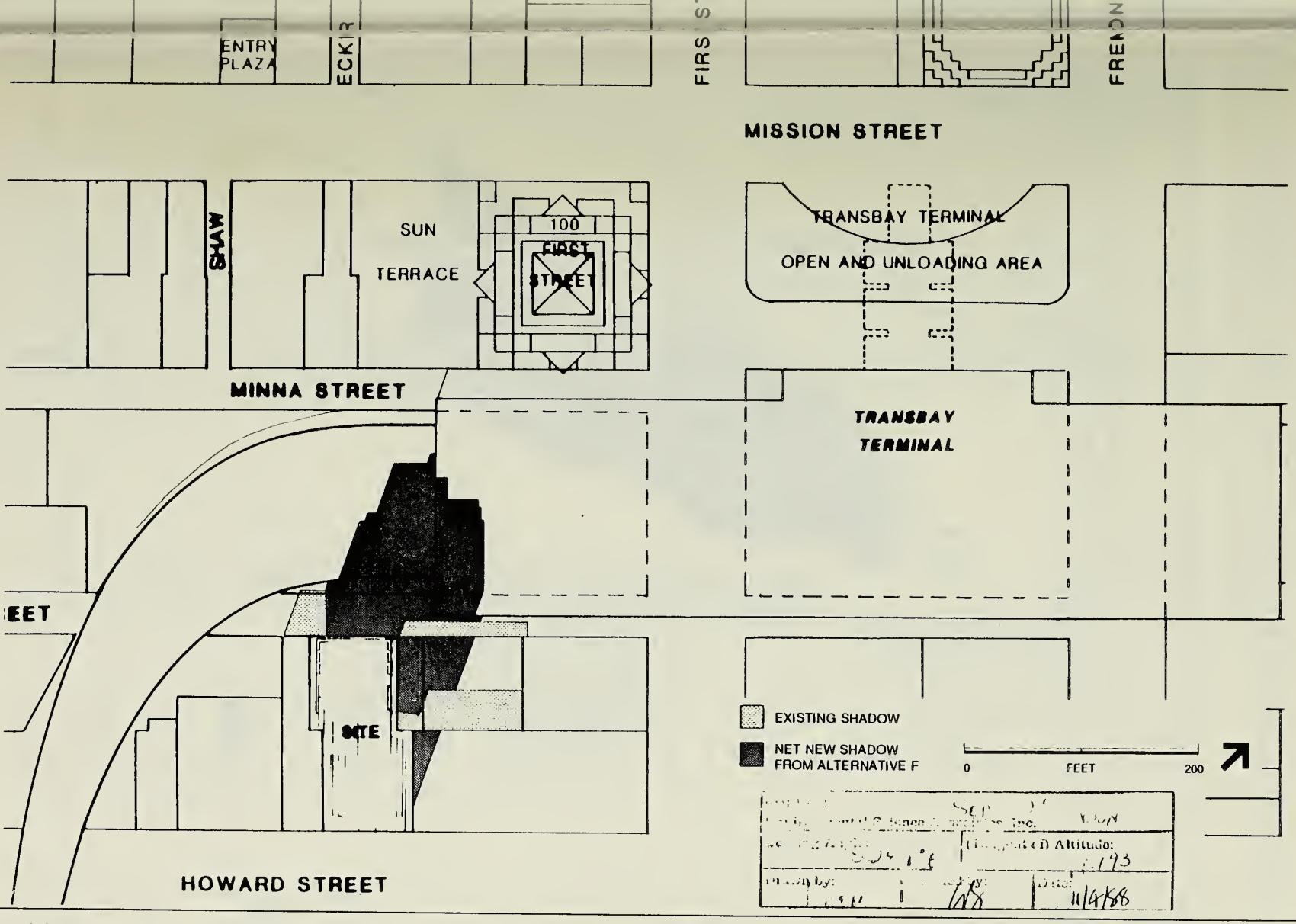
SOURCE: Environmental Science Associates, Inc.



524 Howard Street

FIGURE 30
ALTERNATIVE F SHADOW PATTERNS –
SEPTEMBER 21, 11 A.M.

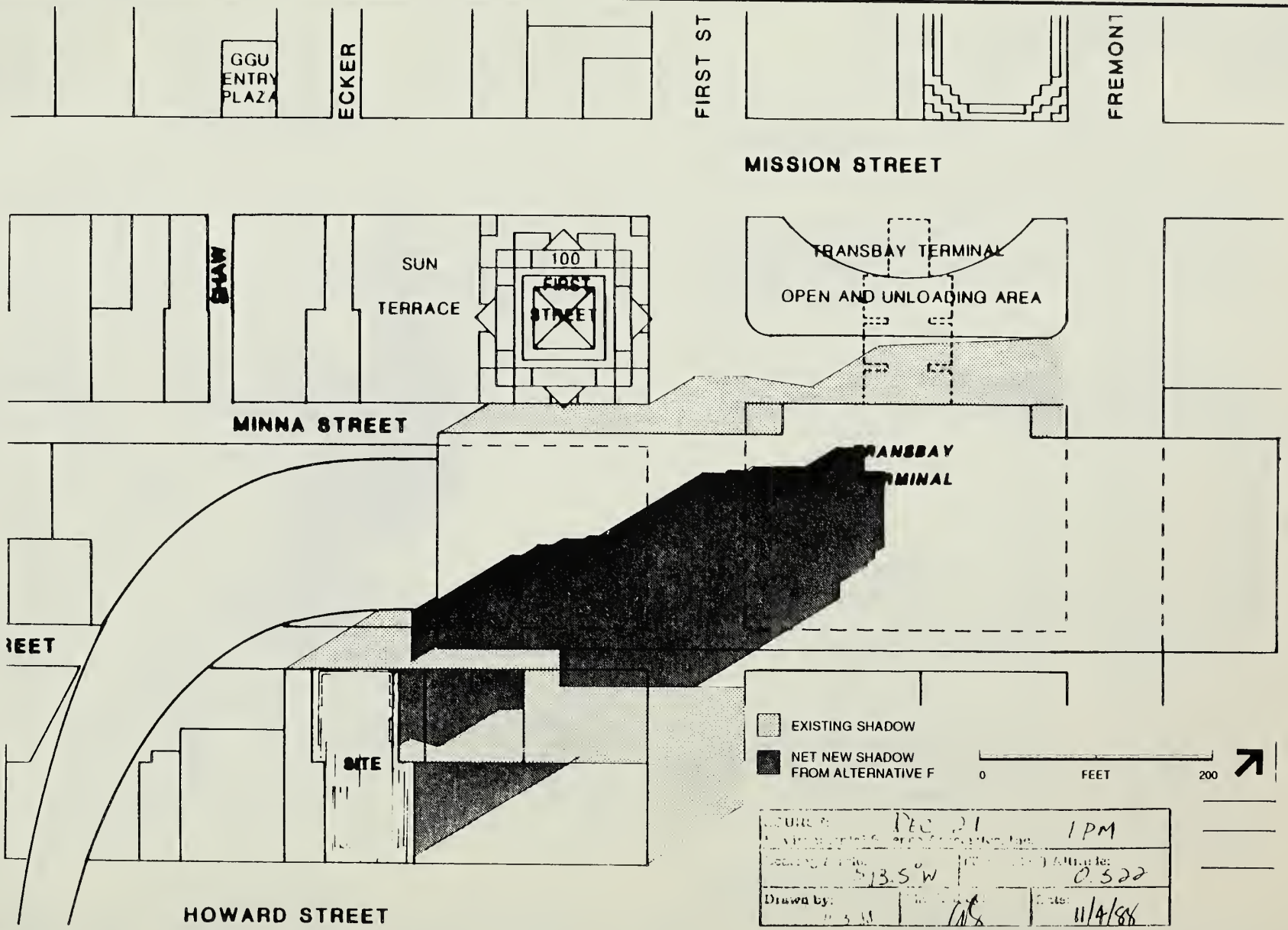
SOURCE: Environmental Science Associates, Inc.



524 Howard Street

FIGURE 31
ALTERNATIVE F SHADOW PATTERNS –
SEPTEMBER 21, 12 NOON

SOURCE: Environmental Science Associates, Inc.



524 Howard Street

FIGURE 32
ALTERNATIVE F SHADOW PATTERNS – DECEMBER 21, 1 P.M.

SOURCE: Environmental Science Associates, Inc.

Energy consumption and air quality effects would be at least 20% less than with the project. The construction period would be about the same, so that construction noise effects would be generally the same as reported for the project.

This alternative would have an OAHPP housing requirement of 77 units (with at least 50% reserved for low- and moderate-income households) compared to 85 units for the project.

The sponsor prefers this alternative because, in the sponsor's opinion, it responds to concerns of scale and compatibility, and of shadowing of existing and potential future open spaces, while meeting the objectives of the sponsor for high quality office space in a location well served by transit.

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925 Mission Street
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X. APPENDICES

APPENDIX A: AIR QUALITY

TABLE A-1: SAN FRANCISCO AIR POLLUTANT SUMMARY, 1985-1987 /a/

POLLUTANT:	STANDARD Federal/b/	STANDARD State/c/	1985	1986	1987
OZONE (O_3) (Oxidant)					
1-hour concentration, ppm					
Highest hourly average	0.12/d/	0.10	0.09	0.07	0.09
Number of violations			0	0	0
CARBON MONOXIDE (CO)					
1-hour concentration, ppm					
Highest hourly average		20	10.0	9.0	9.0
Number of violations			0	0	0
8-hour concentration, ppm					
Highest 8-hour average		9	15.0/e/	12.6/e/	10.0/e/
Number of violations			3	2	1
TOTAL SUSPENDED PARTICULATE (TSP)					
24-hour concentration, ug/m^3					
Highest 24-hour average	260	100/f/	158	124	136
Number of violations			5	5	3
Annual concentration, ug/m^3					
Annual Geometric Mean/g/		60/f/	62	52	61
Annual excess			Yes	No	Yes
PARTICULATE MATTER-10 MICRON (PM_{10})					
24-hour Average (ug/m^3)	150	50			
Highest 24-hour average			--	--	65
Number of violations			--	--	4
LEAD (Pb)					
30-day concentration, mg/m^3					
Highest 30-day average		1.5	0.3	0.2	0.1
Number of violations			0	0	0
NITROGEN DIOXIDE (NO_2)					
1-hour concentration, ppm					
Highest hourly average		0.25	0.12	0.11	0.15
Number of violations	None		0	0	0

(continued)

TABLE A-1: SAN FRANCISCO AIR POLLUTANT SUMMARY 1985-1987 (continued)

POLLUTANT:	STANDARD Federal/b/	STANDARD State/c/	1985	1986	1987
SULFUR DIOXIDE (SO_2)					
24-hour concentration, ppm					
Highest 24-hour average	0.14	0.05	0.032	0.010	0.010
Number of violations			0	0	0

NOTE: ppm = parts per million.
ug/m^3 = micrograms per cubic meter.
mg/M^3 = milligrams per cubic meter.

/a/ 1985-September 1986 data were collected at 900 23rd Street. October 1987 to present data is a consolidation of measurements taken at 900 23rd Street and 10 Arkansas Avenue.

/b/ Federal standard, not to be exceeded more than once per year, except for annual average standards, which are not to be exceeded.

/c/ State standard, not to be equaled or exceeded, except for CO standards, which are not to be exceeded.

/d/ The federal standard is in terms of Expected Annual Excesses which is based on a three-year running average.

/e/ Special measurement station at Ellis St. for street level maximums, referred to as a microscale site.

/f/ The California ARB has redefined the state particulate standard to apply to "inhalable" particulates only (i.e., those which have a diameter less than or equal to ten microns). The new standards are 50 ug/m^3 for 24-hour averages and 30 ug/m^3 for the annual geometric mean.

/g/ The annual geometric mean is a single number which applies to an entire year of data. "No" indicates that TSP concentrations did not exceed $60(ug)m^3$.

SOURCE: California Air Resources Board, 1985 - 1987, California Air Quality Data.

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